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Publication Date

2009

Peer reviewed|Thesis/dissertation

The Influence of ADHD and Adolescent Romantic Relationships on
Early Adult Psychopathology in Females

by

Andrea Lynne Stier

A dissertation submitted in partial satisfaction of the

requirements for the degree of

Doctor of Philosophy

in

Psychology

in the

Graduate Division

of the

University of California, Berkeley

Committee in charge:

Professor Stephen P. Hinshaw, Chair

Professor Ann Kring

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Fall 2009

The Influence of ADHD and Adolescent Romantic Relationships on Early Adult
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by Andrea L. Stier

Abstract

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Doctor of Philosophy in Psychology

University of California, Berkeley

Professor Stephen P. Hinshaw, Chair

Attention-Deficit/Hyperactivity Disorder (ADHD) is a significantly impairing disorder of childhood that affects functioning across numerous domains, including academic, behavioral, and emotional functioning, through adolescence and into adulthood (Barkley, Murphy, & Fischer, 2007; Hinshaw, Owens, Sami, & Fargeon, 2006). Girls and women with ADHD have been understudied in past research. The current study uses a longitudinal design to investigate the romantic relationships of girls with and without ADHD during late adolescence and early adulthood in order to gain a deeper understanding of underlying relationship factors that may be detrimental or protective to their well-being. A large sample of girls with the Inattentive type of ADHD (ADHD/I; $n = 47$), the Combined type of ADHD (ADHD/C; $n = 93$), plus a matched comparison group of girls without ADHD ($n = 88$), were studied when they were 6-12 years of age. In a 10-year prospective follow-up, the sample (age 17-22, $n = 187$) self-reported on the stability, onset, and quality of their romantic relationships, attachment style, relationship aggression, and risky sexual behavior. Girls' relationships were also assessed via information posted on girls' pages on networking websites (Facebook, MySpace), including comments from peers and partners, photographs, and girls' reports about themselves and their relationships. Self-concept, friendship quality and support, and quality and stability of family relationships were examined as potential mechanisms underlying positive or negative relationship effects. Results indicated that girls with ADHD continue to be quite impaired in adulthood relative to their non-ADHD peers with respect to internalizing and externalizing symptoms and that ADHD type (i.e., ADHD/I vs. ADHD/C) does not appear to moderate any such effects. Relative to comparison girls, girls with ADHD initiated dating behavior significantly earlier and showed a significant and sizably larger number of lifetime dating partners. Girls with ADHD also showed a marginally significant effect with regard to increased likelihood of engagement in early sexual intercourse (before age 15). There was also a marginally significant effect with regard to more severe and frequent victimization by relationship aggression and more severe relationship aggression perpetration in girls with ADHD relative to the comparison sample. For all girls, regardless of ADHD diagnosis, there were mixed findings with respect to the impact of romantic relationships: excessive engagement in

romantic relationships in adolescence was a risk factor for later adult externalizing problems, but engagement in a positive romantic relationship in early adulthood was associated with lower levels of concurrent externalizing and internalizing symptoms. Finally, after controlling for childhood externalizing symptoms, childhood peer rejection (but not ADHD diagnosis) also contributed significantly to early adult externalizing behavior, but this association was not mediated by number of romantic relationships in adolescence.

INTRODUCTION

ADHD is characterized by significantly impairing symptoms of hyperactivity, impulsivity, and inattention that begin in childhood and affect an estimated 6-9% of children in the US (Nigg, 2006; Centers for Disease Control, 2007). ADHD symptoms and their associated negative effects (e.g., cognitive deficits, social rejection) were initially believed to remit in adolescence and adulthood, but longitudinal research findings clearly indicate that this is not the case (Barkley, Murphy, & Fischer, 2007; Hinshaw, Owens, Sami, & Fargeon, 2006).

Attention-Deficit/Hyperactivity Disorder (ADHD) in Girls

Although ADHD causes serious impairment in girls as well as in boys (Gaub & Carlson, 1997; Gershon, 2002), most of the important prospective studies of ADHD have focused on the impact of ADHD in all-male or predominantly-male samples (e.g., Barkley et al., 2007; Biederman et al., 1996; Mannuzza, Klein, Bessler, Malloy, & LaPadula, 1998). Discussions of ADHD in girls have generally been limited to identification of sex differences (Biederman et al., 2002; Greene et al., 2001), rather than on the variability among girls with this disorder or, crucially, on mechanisms underlying long-term outcome. This disproportionate focus is likely to result from both the predominance of the disorder in boys, an estimated 4:1 to 9:1 in clinical samples and approximately 3:1 in nonclinical samples (APA, 2000; Gaub & Carlson, 1997) and the lack of awareness of the importance of female manifestations of ADHD.

The prospective studies of Mannuzza and Klein (2000), Biederman et al. (2006), and Hinshaw et al. (2006) have begun to increase our understanding of how ADHD affects girls across the lifespan (for additional information, see Blachman & Hinshaw, 2002; Hinshaw et al., 2006; and Zalecki & Hinshaw, 2004). Thus far, research indicates that ADHD in girls is associated with a host of negative outcomes as late as mid-adolescence, including increased rates of depression, anxiety, eating disorders, and delinquency, lower school and work achievement, troubled family relationships, and substantial problems initiating and maintaining peer relationships (Biederman et al. 2006; Blachman & Hinshaw, 2002; Hinshaw et al. 2006). These problems are likely to continue into early adulthood, as has been seen in similar male-dominated ADHD samples (e.g., Barkley et al., 2007; Mannuzza et al., 1998).

Peer Relationships in Girls with ADHD

Deficits in peer relationships in childhood and adolescence have been shown to predict both short- and long-term adjustment outcomes, including troubled adolescent romantic relationships, problems with adult adjustment, low feelings of self-worth, and depressive symptomatology (Bagwell, Newcomb, & Bukowski, 1998; Hartup, 1996). Research indicates that ADHD symptoms are linked to substantial problems in initiating and maintaining interpersonal relationships (Blachman & Hinshaw, 2002; Wheeler & Carlson, 1994). Girls with ADHD appear to suffer even more peer rejection than their male counterparts (Arnold, 1996; Berry, Shaywitz, & Shaywitz, 1985), perhaps because ADHD symptoms are more gender-atypical for girls. In addition, social relationships appear to be particularly important for establishing healthy adult functioning in girls (Maccoby, 1998), and the significant peer rejection experienced by girls with ADHD is likely to be damaging to their future interpersonal relationships and adult well-being (Gaub & Carlson, 1997).

Specifically, girls with ADHD have been shown to have fewer and lower quality friendships than their non-diagnosed peers, characterized by instability, conflict, and relational

aggression, probably as a result of their lower verbal cognitive capacities, increased relational aggression, and social skills deficits (Blachman & Hinshaw, 2002). Such deficits are likely to influence other interpersonal interactions in adolescence, including interactions around dating. In particular, girls who have a difficult time with peer relationships as children may be prone to have troubled romantic relationships as adolescents and interpersonal problems as adults. Examining romantic relationships in adolescents and young adults with ADHD is therefore an important next step in predicting and potentially intervening in negative long-term outcomes.

Romantic Relationships in Adolescence

Recent research has begun to demonstrate the importance of adolescent romantic relationships and their substantial impact on adolescent development and adult functioning (Collins, 2003; Giordano, Manning, & Longmore, 2006). Adolescents become increasingly involved in romantic relationships as they age, and by middle adolescence, most individuals have begun dating (Collins, 2003). These relationships are influential: by middle to late adolescence, most typically-developing teens rely primarily on their romantic partners, rather than on peer groups, for support (Kuttler & La Greca, 2004). In addition, most late adolescents conceptualize their romantic relationships in a way that was initially thought to be limited to adults, for example by focusing on the importance of commitment and communication (Levesque, 1993). Furthermore, adolescents have substantially different conceptions of peer versus romantic relationships, indicating that adolescent romantic relationships are likely to explain additional variance in adult outcomes beyond that explained by adolescent peer relationships (Collins, 2003). In addition, adolescent romantic relationships act as a template for adult relationships (Shulman & Kipnis, 2001) and are associated with later positive adult functioning (Giordano et al., 2006; Wolfe, Jaffe, & Crooks, 2006).

Encouragingly, engaging in positive adolescent romantic relationships may protect adolescents from negative outcomes. Positive romantic relationships in adolescence are associated with lowered adolescent romantic relationship violence, higher rates of safer adolescent sexual behavior, positive adult romantic relationships, and lowered levels of adult psychopathology (Daley & Hammen, 2002; Wolfe et al., 2006). Unfortunately, engaging in negative adolescent romantic relationships is associated with negative outcomes, especially in girls who start to date at a young age and have a large number of dating partners (Collins, 2003; La Greca & Harrison, 2005). Negative correlates of adolescent romantic relationships include conflict in interpersonal relationships, exposure to relationship violence, increases in internalizing and externalizing symptoms over time, poor academic performance, alcohol use, behavior problems, and lack of a functional rubric for adult relationships (Collins, 2003; La Greca & Harrison, 2005; Woodward et al., 2004). Furthermore, early engagement in romantic relationships, as well as delinquent behavior and low self esteem, is associated with earlier sexual involvement and thus may also increase the risk of contracting STDs or becoming pregnant as an adolescent (Brendgan, Wann, & Vitaro, 2007; Leiberman, 2006; Marin, Kirby, Hudes, Coyle, & Gomez, 2006). Because adolescents in long-term, deeply involved, stable romantic relationships appear to benefit from these relationships, the negative effects associated with adolescent romantic relationships can be at least partly explained by taking into account the impact of the termination of these relationships, which occurs frequently in adolescence, as well as by involvement in romantic relationships characterized by instability, lack of communication, low support, or choosing partners who are delinquent or with whom one has little in common (La Greca & Harrison, 2005).

Externalizing Behavior Problems and Romantic Relationships in Adolescence

Woodward and colleagues' (2002) study on conduct disorder (CD) provides insight into a further potential negative association between romantic relationships and externalizing behavior, such as delinquency and aggression. They found that girls with CD who reported engaging in large numbers of romantic relationships showed the greatest increases in externalizing symptoms over time (Woodward, Fergusson, & Horwood, 2002). Like CD, ADHD is a disorder characterized by externalizing behavior, and a subset of the girls in the current ADHD sample also qualified for a comorbid CD diagnosis in childhood and/or adolescence. Longitudinal research by Loeber and colleagues (1995) has also suggested that ADHD is a risk factor for early onset of CD (Loeber, Green, Keenan, & Lahey, 1995); CD, particularly early onset CD, has been associated with increases in psychopathology across numerous domains (Zoccolillo, 1992). These studies provide indirect evidence that similar processes may occur in girls with ADHD; nonetheless, ADHD is a distinct disorder and previous work in the CD domain is likely only partially informative. Given that girls with ADHD are already at high risk for excessive externalizing behavior, it may well be that engaging in large numbers of romantic relationships is associated with analogous increases in externalizing symptoms in the present sample.

Research on individuals with CD also suggests that early antisocial behavior is associated with increased potential for violence in romantic relationships (Woodward et al., 2002). Because girls with ADHD are more likely to display antisocial behavior than are girls without this condition (Hinshaw, 2002; Zalecki & Hinshaw, 2004), they may be similarly at higher risk for violence in their romantic relationships. The potential bidirectional impact of ADHD and romantic relationships is therefore potentially complex but important to parse. Although it can be difficult to separate the independent effect of romantic relationships on girls' development from the effects of individual factors, such as low self-worth or high interpersonal aggression (which may make some girls more likely to get involved in early or negative romantic relationships), Woodward and colleagues (2002) addressed this issue by examining differential *increases* in externalizing behavior, as opposed to end-point levels of such behavior. In the current study I similarly take potential contributing individual factors into account.

ADHD diagnosis is currently divided into subtypes: (a) predominantly hyperactive–impulsive type (ADHD/HI), (b) predominantly inattentive type (ADHD/I), or (c) combined type (ADHD/C). There have been mixed results regarding differences between ADHD types with respect to history, symptoms, and prognosis. Some studies indicate no significant differences between ADHD types on many relevant factors (e.g. family history, comorbid internalizing symptoms, social functioning, degree of impairment in the inattentive domain; see Barkley, DuPaul, & McMurray, 1990; Faraone, Biederman, Weber, & Russell, 1998; Hinshaw et al., 2006). On the other hand, ADHD types have been shown to differ with respect to age of onset, type of inattentive symptoms, internalizing and externalizing comorbidities, family history of abuse, and academic and social impairment (Blachman & Hinshaw, 2002; Hinshaw et al., 2006; Milich, Ballantine, & Lyman, 2001). Thus, it is important to consider the possibility that ADHD type may moderate the association between ADHD and outcomes in the domain of romantic relationships.

Research into the potential association between ADHD symptoms and romantic relationships is limited. Canu and Carlson (2003) found that ADHD type moderated the association between ADHD and romantic relationships. Specifically, Canu and Carlson found that late-adolescent males with ADHD/I showed passivity and inexperience in romantic

interactions, in contrast to males with ADHD/C, who showed increased sexual drive and more early experience in romantic interactions. The recent work of Barkley, Murphy, & Fischer (2007) also showed that a number of aspects of intimate relationships are compromised for young adults with ADHD, but their longitudinal sample is overwhelmingly composed of males.

Romantic Relationships and ADHD in Adolescence

A preliminary study on adolescent romantic relationships in the present sample was conducted with early- to mid-adolescent females (age 12-17) with and without ADHD (Stier & Hinshaw, in review). We compared the early romantic relationships of adolescent girls with ADHD to those of their non-ADHD peers and assessed the association between engaging in romantic relationships and psychological functioning. Adolescent girls with ADHD/C reported having more romantic partners than girls with ADHD/I, who in turn reported more romantic partners than comparison girls. In addition, there was an interaction between ADHD status and number of romantic partners in predicting adolescent externalizing behavior such that, even controlling for baseline levels of externalizing behavior in childhood, girls with ADHD who had a large number of romantic partners showed the highest rates of externalizing behavior in adolescence. This prospective study represented an unprecedented examination of romantic relationships in girls with ADHD, concluding that girls with ADHD show substantial problems associated with romantic relationships. These relationship difficulties are analogous to those these girls suffer from in other domains, such as increases in externalizing symptoms, internalizing symptoms, eating disorder symptoms, and substance use; poorer social functioning, peer relationships, family relationships, global functioning, and self-worth in adolescence; and greater need for service utilization (see Hinshaw et al., 2006). Overall, for early- to mid-adolescent girls with ADHD, romantic relationships did not appear to be serving a positive or protective function, but rather predicted higher levels of psychological symptoms. Still, the relatively young age of the sample during the Stier and Hinshaw (in review) investigation (averaging just over 14 years), along with the relatively low rate of involvement in romantic relationships (25%), limited the key conclusions that could be drawn, necessitating further examination through late adolescence/early adulthood.

Romantic Relationships and ADHD in Early Adulthood

There may be factors in childhood that may make girls with ADHD more likely to self-select into negative relationships later in life, such as the higher levels of internalizing and externalizing problems seen in girls with ADHD compared to their non-ADHD peers. In the current study I therefore examine *increases* in internalizing and externalizing symptoms from baseline to late adolescence. Indeed, this is an important aspect of the present research, given that the present sample of girls exhibited high rates of such behavior patterns even in childhood, in marked contrast to the comparison sample. Thus, examination of increases in such patterns controls for baseline levels of these behaviors and helps to eliminate self-selection biases.

In addition, girls with ADHD have lower self-concept, are more peer rejected, and have more conflicted and negative parent-child relationships in childhood compared to their non-ADHD peers (Hinshaw, 2002). These factors may also account for increases in symptoms associated with increased romantic relationship engagement. As parent-child relationships and peer relationships potentially offer a positive framework for close interpersonal relationships, girls with ADHD may be hindered developing this positive framework and suffer decrements to

their later romantic relationships, such as difficulties with communication, intimacy, or conflict resolution. Individuals with ADHD tend to suffer from low self-esteem (Slomkowski, Klein, & Manuzza, 1995), and girls may also be seeking to bolster their self-esteem or gain social support they lack in their relationships with peers and parents by engaging in greater numbers of romantic relationships. I therefore control for individual differences in self-worth, friendship support, and parent-child relationships when examining the association between ADHD and romantic relationships.

Furthermore, because positive romantic relationships may serve a protective function, as outlined above, it is necessary to more thoroughly examine additional relationship factors, such as partner support and attachment style, to better understand why engaging in more relationships could be associated with worsening in symptoms for some girls with ADHD. Secure attachment is crucial for personal well-being; for example, insecure attachment is associated with increased risk of depression (Eberhart & Hammen, 2006). In addition, secure attachment is a vital contributor to romantic relationships. One empirically validated approach to couples therapy, emotionally-focused therapy, is based on the theory that relationship satisfaction, communication, and the bond between the couple are all improved when attachment injuries are resolved and the attachment bond between the individuals becomes more secure (Johnson, Hundley, Greenberg, & Schindler, 1999). Partner support has also been shown to be associated with relationship satisfaction (Patrick, Sells, Giordano, & Tollerud, 2007). Perhaps most convincingly, evidence suggests that individuals with securely attached partners provide their partner with more adaptive support and later show higher relationship satisfaction (Cobb, Davila, & Bradbury, 2001). Thus, I anticipated that a subset of girls with ADHD who were engaging in positive relationships would be protected against increases in psychological symptoms. In fact, it may well be that involvement in romantic relationships per se should not be discouraged, but rather that girls should be helped to find positive partners and create stable, supportive relationships. The current study is designed to address several limitations of the preliminary study and to provide further evidence of the clinical impact of ADHD in girls, the public health importance of this condition, and the potential mechanisms underlying the association between excessive romantic relationship engagement and early adult psychopathology in order to design effective interventions. First, the sample is followed up 10 years after initial ascertainment. At this early adult stage (age 17-22), most girls have begun dating, whereas at the 5-year follow-up, only a minority were (Stier & Hinshaw, in review). Also, to broaden understanding of romantic relationships in girls with ADHD and to add validity to previous findings, several additional important relationship constructs and potential mechanisms underlying the associations between childhood ADHD, adolescent romantic relationships, and psychological symptoms have been added to the assessment battery, including (a) more thorough assessments of relationship quality, relationship violence, and sexual behavior in early adulthood; (b) a measure of attachment style in early adulthood; and (c) measures of self-concept, parent-child relationships, and peer rejection in childhood. The negative effects of ADHD extend to at least adolescence, and this study is an important step in the process of understanding how childhood ADHD affects early adult relationships and well-being.

HYPOTHESES

Given prior findings on the presence of ADHD subtype differences with regards to psychological symptoms and social impairment, I wished to test the hypothesis that girls with

ADHD/C are more impaired than girls with ADHD/I on the romantic relationship, sexual behavior, and psychological symptom variables of interest. However, ADHD type differences did not emerge in preliminary analyses, as has often been the case in the literature with respect to a wide range of criterion variables. I thus examined differences between girls with and without ADHD more generally, independent of ADHD type, by collapsing across the types.

Hypothesis 1: Girls with ADHD will engage in a greater number of romantic relationships and a greater intensity of sexual behavior than will comparison girls.

- 1a. Girls with ADHD will start dating at a younger age than comparison girls.
- 1b. Girls with ADHD will date more romantic partners than comparison girls.
- 1c. Girls with ADHD will be more likely to report being in a romantic relationship, both privately in the lab and publically on their personal webpages, than comparison girls.
- 1d. Girls with ADHD will engage in more intense sexual behavior than comparison girls (i.e. be more likely to have engaged in oral or genital sex vs. less intense sex acts, such as kissing or manual genital contact).
- 1e. Girls with ADHD will engage in risky sexual behavior (i.e. sex acts without STD/contraceptive protection) more frequently than comparison girls.

Hypothesis 2: Girls with ADHD will engage in romantic relationships that are more negative.

- 2a. Girls with ADHD will report having romantic relationships characterized by lower stability (i.e., shorter duration) than comparison girls.
- 2b. Girls with ADHD will report having romantic relationships characterized by less support than comparison girls.
- 2c. Girls with ADHD will report having romantic relationships characterized by more conflict than comparison girls.
- 2d. Girls with ADHD will be less satisfied with their romantic relationships than comparison girls.
- 2e. Girls with ADHD will have romantic relationships characterized by more frequent and severe perpetration of and victimization by aggression and violence than comparison girls.
- 2f. Girls with ADHD will have webpages that indicate more negative romantic relationships relative to comparison girls: On their webpages, girls with ADHD will have more negative and fewer positive descriptions of their romantic partner, fewer supportive comments and more aggressive comments from their romantic partner, and fewer photos of them with their romantic

partner than comparison girls.

Hypothesis 3: Engaging in romantic relationships will affect girls' psychological symptoms.

3a. Girls who engage in greater numbers of romantic relationships will show more increases in psychopathology over time, moderated by ADHD status.

3a1. Controlling for externalizing symptoms at baseline, there will be a main effect of ADHD and number of partners on externalizing symptoms in adulthood, as well as an interaction between ADHD and number of partners: Girls with ADHD and girls who date a large number of partners will both have increased externalizing symptoms, compared to childhood levels; girls with ADHD who date a large number of partners will have the largest increase in externalizing symptoms.

3a2. Controlling for internalizing symptoms at baseline, there will be a main effect of ADHD and number of partners on self- and parent-reported internalizing symptoms, as well as an interaction between ADHD and number of partners: Girls with ADHD and girls who date a large number of partners will both have increases in internalizing symptoms, compared to childhood levels; girls with ADHD who date a large number of romantic partners will have the largest increase in internalizing symptoms.

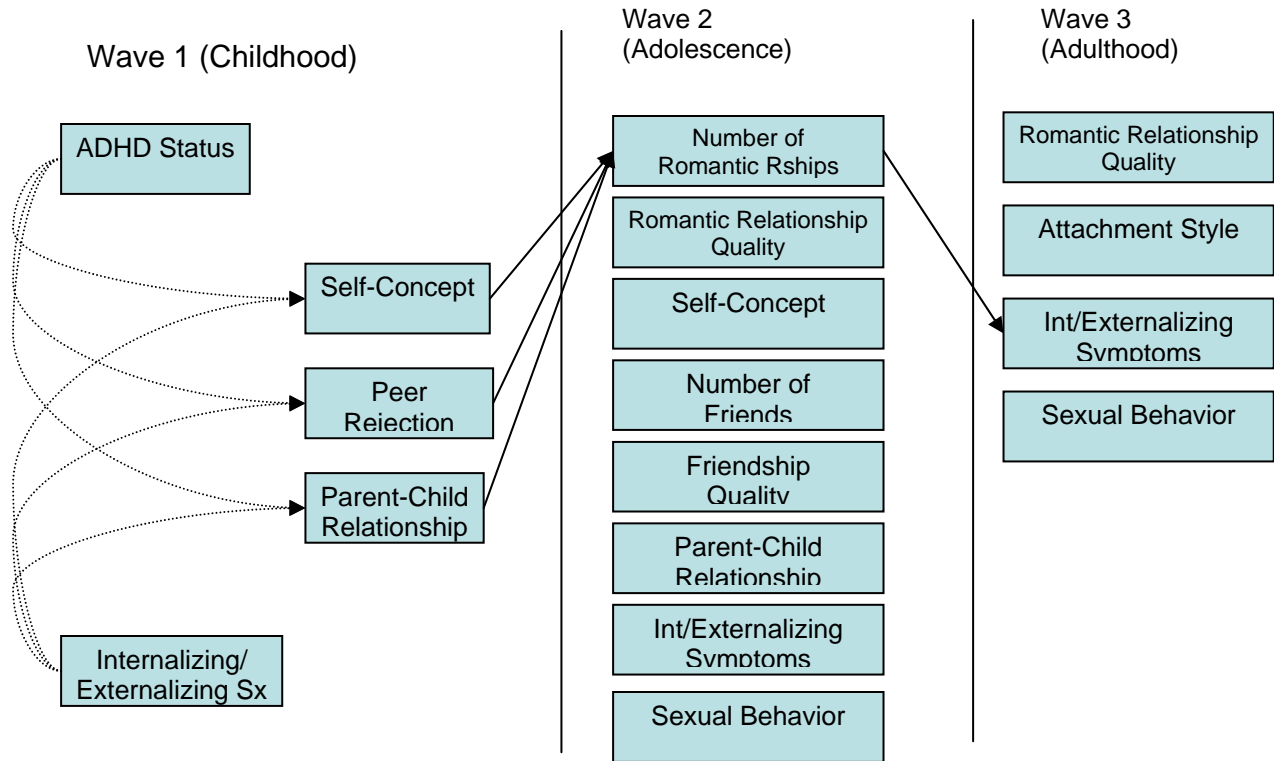
3b. Girls who engage in positive romantic relationships will show less psychopathology, than girls who engaged in negative romantic relationships, independent of ADHD status.

3b1. Girls whose relationships are characterized by high support, secure attachment, low conflict, and low aggression/violence will have fewer externalizing symptoms than girls whose relationships are characterized by low support, insecure attachment, or high conflict, aggression, or violence. There will be no interaction between ADHD status and positive romantic relationship engagement on externalizing symptoms.

3b2. Girls whose relationships are characterized by high support, secure attachment, low conflict, and low aggression/violence will have fewer internalizing symptoms than girls whose relationships are characterized by low support, insecure attachment, or high conflict, aggression, or violence. There will be no interaction between ADHD status and positive romantic relationship engagement on internalizing symptoms.

4. Mechanism Analyses: Girls who lack social support, have conflicted family relationships, or have low perceived self-competence in childhood, will engage in greater numbers of romantic relationships in adolescence and show more psychopathology in early adulthood, compared to girls who have good social support, positive parent-child relationships, and high perceived self-competence in childhood, independent of ADHD status.

The current study allows for the examination of many important potential pathways between childhood factors, adolescent romantic relationships, and early adult psychopathology. The following diagram outlines the key pathways that will be explored as part of the mechanisms analysis.



Specifically, I hypothesize the following:

4a. Girls with low self-concept in childhood will show greater increases in internalizing and externalizing symptoms in early adulthood than girls with high self-concept in childhood, mediated by the number of romantic relationships in adolescence.

4b. Girls with conflicted parent-child relationships in childhood will show greater increases in internalizing and externalizing symptoms in early adulthood than girls without such conflicted parent-child relationships, mediated by the number of romantic relationships in adolescence.

4c. Girls who experience peer rejection in childhood will show greater increases in internalizing and externalizing symptoms in early adulthood than girls without peer rejection, mediated by the number of romantic relationships in adolescence.

4d. Girls with ADHD and high levels of childhood internalizing or externalizing symptoms will be more likely to suffer from lower self-concept, conflicted parent-child relationships, and peer rejection in childhood than comparison girls, but there will be no interaction between ADHD status and low self-concept, parent-child relationships, or peer rejection on psychopathology in early adulthood.

Although there are many more mediational pathways that may have important implications for the effects of childhood ADHD on romantic relationships and adult functioning, I will leave those as exploratory and not an essential part of the dissertation.

METHOD

Participants

The initial recruitment process at baseline in childhood (Wave 1) involved a multigated

screening and diagnostic procedure that permitted recruitment of a sample of preadolescent girls with ADHD and a comparison sample of girls matched on age and ethnicity (see Hinshaw, 2002, for details). Girls with ADHD were recruited through direct advertisement, schools, pediatricians, and mental health centers; comparison girls with ADHD were recruited through parallel formats, including direct advertisement, schools, pediatricians, and community centers. Preliminary rating criteria on parent and teacher scales were set with low, sex-specific thresholds for ADHD symptoms to prevent premature exclusion of eligible girls, but final inclusion in the study required ADHD participants to meet full criteria for ADHD-Combined type (ADHD/C) or ADHD-Inattentive type (ADHD/I) through the Diagnostic Interview Schedule for Children (4th ed., DISC-IV; Shaffer, Fisher, Lucas, Dulcan, & Schwab-Stone, 2000).¹ Common comorbidities were permitted (depression, anxiety disorders, learning disorders, oppositional defiant disorder [ODD], and conduct disorder [CD]). Comparison girls could not meet diagnostic criteria for ADHD on parent or teacher ratings or structured interview criteria. Exclusion criteria included evidence of psychosis or overt neurological disorder, mental retardation, lack of English spoken at home, and medical problems preventing participation at the summer camp. The camps were not designed to be therapeutic but rather were intended to be enrichment programs. Camps were provided at no charge, allowing a diverse sample to participate.

At Wave 1, the girls were 6-12 years of age ($M = 9.1$). The heterogeneity of the San Francisco Bay Area and wide range of referral sources yielded a sample at baseline that contained 228 girls, 140 with ADHD (93 ADHD/C, 47 ADHD/I) and 88 in the comparison group, all from diverse ethnic backgrounds (53% White, 27% African-American, 11% Latina, 9% Asian-American) and socio-economic strata (families ranged from receiving social welfare to the highest economic stratum).

At the 5-year follow-up (Wave 2), assessments were performed on 209 of the 228 participants (92%), who were age 11-18 ($M = 14.2$ years). Reasons for nonparticipation included loss of the family to tracking efforts ($n = 4$), refusal of the family to participate ($n = 5$), and difficulty in scheduling assessment sessions ($n = 10$). Comparison of the retained sample with the girls who were lost to attrition indicated minimal differences between groups (i.e., within the realm of chance findings, and with small effect sizes), and the Wave 2 follow-up sample appeared to be representative of the total sample (see Hinshaw et al., 2006, for details).

At the 10-year follow-up (Wave 3), we intend to perform assessments on at least 90% of the follow-up sample, for a total of at least 190 girls. Girls have been recruited back to the lab to participate in two 4-hour testing sessions, and are being compensated for their time. Currently 187 girls have returned for at least one of two testing sessions, representing 89% of the Wave 2 sample, and 181 girls have completed full testing, representing 87% of the Wave 2 sample and 79% of the initial Wave 1 sample. Given the representative nature of the Wave 2 sample, we believe that the Wave 3 sample is likely to be similarly representative of the initial, diverse

¹ According to the current diagnostic system (*Diagnostic and Statistical Manual of Mental Disorders*, 4th ed., text rev. [DSM-IV-TR], APA, 2000), ADHD diagnosis is divided into three types: (a) predominantly hyperactive-impulsive type (ADHD/HI), (b) predominantly inattentive type (ADHD/I), or (c) combined type (ADHD/C). ADHD/HI, characterized by excessive talking, fidgeting, motoric activity, and deficits in impulse control, is primarily seen in toddlerhood or the preschool years (Lahey et al., 1998). Because the current study focuses on the impact of ADHD in school-age and older girls, we excluded girls meeting criteria for ADHD/HI, thereby maximizing statistical power for key ADHD/I versus ADHD/C type contrasts.

sample at baseline. Considerable efforts are being made to locate, recruit, and evaluate the remainder of the sample at this crucial time period of late adolescence/early adulthood; indeed, at the time of writing, some of the potential participants are not quite 17 years of age, the minimum age for participation; it is anticipated that over 200 will be included by the spring of 2010.

Measures

At each wave, assessments were performed by highly trained B.A.-level research assistants and Ph.D. students in clinical psychology. Staff members changed at each wave of data collection, and staff members at the 5- and 10-year follow-ups were not informed of participants' baseline diagnostic status. Although responses to questions at follow-up assessments (e.g., about stimulant medication) could suggest the presence of ADHD, many data are objective, and diagnostic status had changed for some girls at each follow-up, suggesting that data were unlikely to be biased by breaking of blinks (Hinshaw et al., 2006). The majority of the girls with ADHD/C and ADHD/I had taken psychotropic medication either currently or in the past. Parents and teachers were asked to report on the girls' unmedicated behavior whenever possible, and currently-medicated girls participated in at least one of the 10-year follow-up assessment visits on a day they did not take their stimulant medication. It is important to note that prior analyses suggest that the potential benefits of medication at follow-up are mitigated by the intervention-selection bias, such that those participants with more problematic symptomatology are the most likely to receive treatment (Hinshaw, 2002; Hinshaw et al., 2006).

Baseline Assessment (Wave 1)

Relevant constructs assessed at baseline included multi-method and multi-informant assessments of ADHD and externalizing and aggressive behavior, internalizing symptoms, self-concept, parent-child relationships, and peer relationships. Parallel constructs assessed at both follow-up assessments (Waves 2 and 3) also utilized multiple informants and many of the same (or parallel) measures, including measures of ADHD and externalizing symptoms, internalizing symptoms, and peer relationships, as well as additional measures of romantic relationships, sexual behavior, and relationship violence.

ADHD Diagnosis

A multi-method, multi-informant process was used to determine diagnosis at Wave 1. The Diagnostic Interview Schedule for Children—4th edition (DISC-IV; Shaffer et al., 2000) is a well-validated, highly structured diagnostic interview that provides symptom counts and psychiatric diagnoses for the major disorders in the Diagnostic and Statistical Manual of Mental Disorders (4th ed., DSM-IV, American Psychological Association, 1994). Parents completed the DISC-IV at Wave 1 to assess the girls' psychiatric symptoms prior to participation in the camps. Girls assessed as having ADHD met full criteria for ADHD (either inattentive [ADHD/I] or combined [ADHD/C] subtype) on the DISC-IV, requiring at least six inattentive symptoms for ADHD/I or at least 6 inattentive and 6 hyperactive-impulsive symptoms for ADHD/C. Comparison girls had an absence of a DISC-IV diagnosis of ADHD.

The Swanson, Nolan, and Pelham Rating Scale—4th edition (SNAP-IV; Swanson, 1992) is a parent and teacher rating scale that includes a checklist of the DSM-IV items for ADHD and ODD, with each scored on a rating scale from 0 (not at all) to 3 (very much). It has been used extensively in ADHD treatment and assessment research (e.g. (MTA Cooperative Group, 1999)). The SNAP-IV was administered to girls' parents at Wave 1 to assess the girls' ADHD symptoms

prior to participation in the camps. For eligibility in the ADHD group, girls also had to meet full criteria for ADHD/I or ADHD/C on the parent SNAP-IV. For a complete description of the ADHD and comparison criteria, see Hinshaw (2002).

Perceived Self-Worth

Perceived self-worth at Wave 1 was assessed using the Harter Perceived Competence Scale for Children (Harter, 1982), a commonly used child self-concept measure with high internal consistency and test-retest reliability. Children self-reported the extent to which they agreed or disagreed with statements about their perceived competence across several domains (cognitive, social, physical, and general). To reduce the number of potential covariates/predictors in such a complex study and given the conceptual focus on overall perceived competence rather than domain specific scores, self-worth was operationalized as the Global Self-Worth Subscale score ($\alpha = .73$).

Parent-Child Relationships

Parental negativity at Wave 1 was appraised using two measures: the Alabama Parenting Questionnaire (APQ; Shelton, Frick, & Wootton, 1996) and the Ideas About Parenting scale (IAP; Heming, Cowan, & Cowan, 1990). Primary caregivers (usually mothers) completed the APQ Corporal Punishment subscale, assessing spanking and hitting of the child (3 items; $\alpha = .62$). Caregivers also completed the IAP Authoritarian subscale, tapping assertive discipline (17 items; $\alpha = .76$). Data from the APQ and IAP were each Z-scored, and *Parent-Child Relationship Quality* was operationalized as the mean of these two z-scores, with higher scores indicating more negative relationships.

Peer Rejection

Peer rejection at Wave 1 was assessed using Coie and colleagues' standard sociometric procedures (Coie, Dodge, & Coppotelli, 1982) during the summer camp. All children nominated three peers from the camp whom they liked best and three whom they liked least. Proportion scores were calculated by dividing the number of "most liked" and "least liked" nominations received by the number of peers providing nominations. This measure has been used extensively and shows good test-retest reliability ($r = .65$). In the current sample, the stability of nominations over the 5 weeks of each camp was high for both positive and negative nominations (see Blachman and Hinshaw, 2002, for more details). *Peer Rejection* was operationalized as the difference between the proportion of "least liked" nominations and the proportion of "most liked" nominations, with higher scores indicating greater peer rejection.

Externalizing and Internalizing Symptoms

Externalizing and internalizing psychopathology were assessed at Wave 1 using the Child Behavior Checklist and Teacher Report Form (CBCL, TRF; Achenbach, 1991a; Achenbach, 1991b). These scales are extensively used and contain the broadband factors of Externalizing Symptoms (aggressive behavior and delinquent behavior scales) and Internalizing Symptoms (anxious/depressed behavior, withdrawn, and somatic problems scales). CBCL and TRF scales have excellent validity, test-retest reliability, and internal consistency. Each of the 113 items on the CBCL is rated on a 0-2 metric. Composites of parent and teacher ratings of externalizing and internalizing behavior were created by averaging externalizing symptom T-scores on the parent

CBCL and teacher TRF ($r = .83$) and internalizing symptom T-scores on the parent CBCL and teacher TRF ($r = .55$), respectively, and these multi-informant scores were used in all analyses. For girls who had only a parent or teacher rating, the single parent or teacher score was used as the best available measure.

5-Year Follow-up Assessment (Wave 2)

Romantic Relationships

Adolescent peer and romantic relationships at Wave 2 were appraised through the Social Relationships Interview (SRI; Blachman & Briscoe-Smith, 2001; see relevant data in Stier & Hinshaw, under review). This measure assesses friendships and dating behavior, including dating status; number, duration, and quality of peer and romantic relationships; violence and aggression in peer and romantic relationships; and sexual behavior. Both opposite sex and same sex romantic relationships and sexual behavior were assessed by the SRI and were included in the analysis.

Dating status at Wave 2 was determined via girls' responses to questions about when their participation in different types of dating behavior first occurred (e.g., the grade you were in when you... "first went to movies, concerts, sports, activities, parties, or other places with a group of both boys and girls (but not as a date);" "dated or went out with someone, just the two of you"). Girls who reported that they had already at least "dated or went out with someone, but with a group of friends" were categorized as daters, whereas girls who had spent time with the opposite sex (or same sex for girls identifying as having romantic interest in the same sex) but not begun "dating" or "going out," even casually, were categorized as non-daters.

Number of dating partners at Wave 2 was assessed by the question on the SRI, "How many different boyfriends/girlfriends have you had since you began seeing/going out with people?" If requested, the term "boyfriend" or "girlfriend" was defined for girls as "someone you were seeing regularly or having a serious relationship with."

Relationship aggression and violence at Wave 2 was measured by on the SRI as the frequency of a range of different aggressive or violent behaviors reported by participants to have taken place within the context of their romantic relationships. A distinction was made between aggressive acts perpetrated by the girls on their partners and acts in which girls were the victims of the aggression. Severity of items ranged from "teasing and playful name calling" to "hitting and someone was hurt." Because aggressive behavior that takes place in the context of romantic relationships is likely to be nonpublic, it was important to assess this domain via self-report rather than through maternal or teacher ratings of aggression.

Sexual behavior at Wave 2 was assessed on the SRI by questions about involvement in sexual activity, ranging from "have you ever held hands?" to "have you ever had sexual intercourse?" To create the *Sexual Behavior Intensity* variable, items were ranked on an ordinal list according to degree of physical contact, and the rank of the most intense sexual behavior the girl had participated in determined her sexual behavior score, where "7" was intimate touching of genitals with clothes off, "8" was oral sex, and "9" was sexual intercourse.

Peer Acceptance

The logistics and costs of performing school-wide sociometric evaluations at Wave 2 were prohibitive, so peer-related variables at follow-up were assessed through three different measures completed by three different informants. First, teachers completed the Dishion Social

Preference Scale (Dishion, 1990), a measure of the proportion of peers who reject, accept, and ignore the adolescent, with each of the three items rated on a 5-point scale. Dishion (1990) has noted moderately large correlations (in the .5 range) between self-reported peer acceptance and teacher reports of peer acceptance on the Social Preference Scale. A widely used, well-validated social preference score (Lahey et al, 1994) was created by subtracting the rejection rating from the acceptance rating.

Girls also self-reported on items related to peer relationships via the Social Relationships Interview (Blachman & Briscoe-Smith, 2001), also described above. Peer acceptance on the SRI was assessed via a question about how easy or hard it was for the girl to make and keep friends, with 5 response options including “it is hard for me to make friends, but once I do, I usually keep them for a while” and “I can make friends, but it is hard for me to keep them because they end up not liking me.” A categorical variable was created by collapsing the options that pertained to difficulties with either making *or* keeping friends for the purposes of this analysis, leaving three categories: (a) both making and keeping friends is easy, (b) some difficulties with making *or* keeping friends; (c) both making and keeping friends is hard. In the current sample, the correlation between teacher reports of peer acceptance on the Social Preference Scale and the girls’ self-reports of peer acceptance was $r = .31, p < .005$, indicating some concordance between self- and observer report in assessing their peer relationships.

Externalizing and Internalizing Symptoms

Externalizing and internalizing symptoms at Wave 2 were again assessed using the Child Behavior Checklist and Teacher Report Form (CBCL, TRF; Achenbach, 1991a; Achenbach, 1991b). Composites of parent and teacher ratings of externalizing and internalizing behavior were again created by averaging externalizing symptom T-scores on the parent CBCL and teacher TRF and internalizing symptom T-scores on the parent CBCL and teacher TRF, respectively, and these multi-informant scores were used in all analyses. Parent T-scores on the CBCL were used in lieu of the composite for those girls whose teachers did not complete the TRF.

Self-worth

Self-worth at Wave 2 was assessed using the Harter Self-Perception Profile for Adolescents (Harter, 1988), which is the adolescent version of the Harter scale for children used at baseline. Adolescents made analogous self-reports of the extent to which they agreed or disagreed with statements about their perceived competence across several domains (scholastic, behavioral conduct, social, athletic, close friends, job, romantic relationships, physical appearance, and global self-worth). Social Acceptance and Global Self-Worth subscales are used as relevant indices of self-concept. As reported by Harter (1982), internal consistencies of these scales range from .75 to .84, with test–retest reliabilities ranging from .69 to .80.

10-Year Follow-up Assessment (Wave 3)

Romantic Relationships

Adolescent romantic relationships at the 10-year follow-up were appraised via self-report on the revised Social Relationships Interview (SRI-r; Blachman, Briscoe-Smith, Stier, & Zalecki, 2006) and analysis of personal webpages (i.e. Facebook and MySpace pages) using the Online

Relationships Coding Manual (ORCM; Swezdo, Mikami, & Stier, 2007).

The SRI-r is based on the SRI used at the 5-year follow-up and continues to assess friendships and dating behavior, including dating status; number, duration, and quality of peer and romantic relationships; violence and aggression in peer and romantic relationships; and sexual behavior. Relative to the SRI, the SRI-r includes more questions about relationship quality and support, as well as additional relationship factors including attachment style. Both opposite sex and same sex romantic relationships and sexual behavior were assessed by the SRI-r and were included in analyses.

The ORCM assesses peer and romantic relationships as presented by the girls' personal webpages. It has been used to examine friendships in young adult, non-clinical populations and has showed good reliability and validity when compared with other measures of peer relationships in adolescence and adulthood (Mikami, Swezdo, Allen, Evans, & Hare, 2009), indicated by good inter-coder correlations ($ICC = .73-.94$) and correlations in the $.2-.5$ range with Coie and colleagues' peer sociometric status measure (Coie et al., 1982)'s and the Network of Relationships Inventory (NRI: Furman & Buhrmester, 1985). The manual codes both the text and photos the girls have posted about themselves as well as comments and photos other people have posted for the girls on the girls' pages. A high percentage of the current sample (90%) reported having personal webpages, and the majority of them (86%) gave permission to our investigative team to access them. A copy of the ORCM is included as Attachment A.

Dating status was assessed at Wave 3 using questions on the SRI-r that were identical to questions on the SRI used at the 5 year follow-up, as well as on the ORCM using the girls' stated relationship status on their personal webpages.

Number of lifetime dating partners and *sexual behavior* were assessed at Wave 3 using questions on the SRI-r that were identical to questions on the SRI used at the 5 year follow-up. In addition, girls reported on the number of *dating partners in the last year*. The SRI-r also assesses age of onset of oral sex and sexual intercourse. *Early sexual onset* was operationalized as sexual intercourse at or before age 15, according to the standard in research on adolescent sexuality (e.g. Brendgen, Wanner, & Vitaro, 2007; Genius & Genius, 2004; Zimmer-Gembeck & Helfand, 2008).

Relationship aggression and violence was assessed at Wave 3 using questions on the SRI-r that were identical to questions on the SRI used at Wave 2. For each girl, four composite scores were created: 1. *Relationship Aggression Perpetration Frequency*, calculated as the sum of all instances of all types of aggressive and violent acts girls reported perpetrating against their romantic partners; 2. *Relationship Aggression Perpetration Severity*, operationalized as the most severe aggressive act each girl reported ever perpetrating against one of her romantic partners; 3. *Relationship Aggression Victimization Frequency*, calculated as the sum of all instances of all types of aggressive and violent acts girls reported being victims of in the context of their romantic relationships; and 4. *Relationship Aggression Victimization Severity*, operationalized as the most severe aggressive act each girl reported ever being a victim of at the hands of a romantic partner. *Public Partner Aggression* was also assessed by the ORCM as the number of aggressive comments that romantic partners had posted on the girls' personal webpages.

Relationship quality was assessed using an expanded set of questions on the SRI-r that tap both positive aspects of romantic relationships (e.g. "my boyfriend/girlfriend and I share secrets") and negative aspects of romantic relationships (e.g. "my boyfriend/girlfriend and I yell at each other"). The *Positive Relationship* composite was calculated as the sum of scores on the 7 positive relationship questions on the SRI ($\alpha = .96$). The *Negative Relationship* composite was

calculated as the sum of the scores on the 6 negative relationship questions on the SRI ($\alpha = .91$). Relationship quality was also assessed using the ORCM: *Positive Statements About Partner*, a likert-like scale assessing degree to which girls include positive information about their partners on their webpages, and *Negative Statements About Partner*, an analogous likert-like scale assessing the degree to which girls include negative statements about their partner on their webpage. The ORCM also includes a measure of *Public Partner Support*, operationalized as the number of supportive comments posted by girls' partners on the girls' personal webpages. *Relationship Satisfaction* was assessed by the question on the SRI-r, "how satisfied are you with your current relationship status?"

Attachment style was determined using questions on the SRI-r that assessed secure and insecure attachment styles (e.g. "I find it easy to trust my partner"; "I find it hard to let others get close to me"). These questions are drawn from Collins and Read's (1990) Adult Attachment Scale, which was developed using Hazan and Shaver's (1987) extensively used and well-validated categorical adult attachment descriptions. This scale consists of three factors: secure, anxious-avoidant, and anxious-resistant. *Primary Attachment Style* was determined by summing each girl's scores on questions that load on each attachment factor to create a score for each attachment type; the greatest of the three scores corresponded to the girl's primary attachment style. Collins and Read's measure has been shown to be highly correlated with Hazan and Shaver's (1987) categorical measure, as well as with Hendrick and Hendrick's (1986) widely used and well-validated Love Attitudes Scale (Collins & Read, 1990).

Positive Early Adult Romantic Relationship is a dichotomous variable, where girls who scored (a) above the midpoint on the Positive Relationship Composite, indicating the general presence of positive feelings about their partner, (b) below the midpoint on the Negative Relationship composite, indicating a general absence of serious negative feelings about their partner, (c) below the median score on all four Relationship Aggression measures, and (d) who had a secure attachment style ($n = 27$ girls) were categorized as having positive early adult romantic relationships, whereas girls who had a low Positive Relationship composite score OR high Negative Relationship composite or Relationship Aggression scores OR insecure attachment ($n = 131$ girls) were categorized as having negative early adult romantic relationships.

Externalizing and Internalizing Symptoms

Externalizing and internalizing symptoms were assessed via parent report on the Adult Behavior Checklist (ABC; Rescorla & Achenbach, 2004), a measure analogous to the CBCL but appropriate for late adolescents and young adults. This measure has been used extensively and is well-validated and reliable. In addition, because many of the girls were living away from home and parents may have been less aware of their symptoms, girls' self-reports on the Adult Self-Report (ASR, Achenbach, 1997), a measure analogous to the ABC, were included. This measure has also been used extensively and is well-validated and reliable. Like the CBCL, the ABC and ASR contain the broadband factors of Externalizing Symptoms (aggressive behavior and delinquent behavior scales) and Internalizing Symptoms (anxious/depressed behavior, withdrawn, and somatic problems scales), and have items rated on a 0-2 metric. Composites of each parent and girl's ratings of externalizing and internalizing behavior were created by averaging the externalizing symptom T-scores on the ABC and ASR and internalizing symptom T-scores on the ABC and ASR, respectively, and these multi-informant scores were used in all analyses.

Covariates

Girls' Full Scale IQ at baseline was indexed by the Wechsler Intelligence Scale for Children (3rd edition, WISC-III; Wechsler, 1991), a psychometrically sound, widely used test that is age-normed and shows high test-retest reliability. Externalizing behavior at baseline was assessed by scores on the Externalizing Behavior scales of the Child Behavior Checklist (CBCL) and Teacher Report Form (TRF) (Achenbach, 1991), as well as observation of relevant behavior at the summer camps (see Hinshaw & Zalecki, 2004, for details). Specifically, as was done in the preliminary study (Stier & Hinshaw, in review), T scores on the externalizing scale of the CBCL and TRF were used as indicators of maternal and teacher perceptions of overt aggression and delinquent behavior in childhood. The mean of the maternal and teacher T scores ($\alpha = .52$) served as the composite measure of externalizing behavior at baseline. Parents reported on family income and maternal education at the 10-year follow-up in a questionnaire. A composite of these two factors was used to indicate socioeconomic status (SES). Medication status was assessed via parent report of girls' use of psychotropic medication during the year preceding the 10-year follow-up interview. Conduct Disorder (CD) and Oppositional Defiant Disorder (ODD) were assessed in adolescence via parent (usually mother) report on the Diagnostic Interview Schedule for Children, 4th ed (DISC-IV). Finally, girls' age at the 10-year follow-up was also included as a covariate.

RESULTS

Statistical analyses were performed using SPSS for Windows (Version 13; SPSS, 2004). Initial analyses revealed that there were no differences between girls with ADHD/C vs. ADHD/I on any of the outcome variables. Thus, all girls with ADHD were thus collapsed into a single ADHD group for subsequent analyses.

Hypothesis 1

To examine differences in the dating behavior and relationship involvement of girls with and without ADHD, a multivariate analysis of variance (MANOVA) was used to assess for group differences with respect to age of dating onset, number of romantic partners, and current romantic relationship engagement. To examine differences in sexual behavior, a second MANOVA was used to compare girls with ADHD and comparison girls with respect to degree of involvement in sexual behavior, age of involvement in oral sex and sexual intercourse, and condom use. Each significant MANOVA was followed by a multivariate analysis of covariance (MANCOVA) to address potential effects of covariates, and each significant MANCOVA was followed by individual analyses of variance (ANOVAs) to test for the effects of ADHD on this set of dependent variables were then performed. Significant ANOVAs were followed by analyses of covariance (ANCOVAs) to address effects of covariates.

Chi-squared tests were used to test for a difference between the proportion of ADHD vs. comparison girls who reported being currently involved in a romantic relationship privately and publically. A third Chi-squared test was used to assess for differences in the proportion of ADHD vs. comparison girls who demonstrated early onset of sexual behavior.

Hypotheses 1a and 1b: A 2 (Group: ADHD, Comparison) X 4 (Dating: grade started; grade regularly dating; grade first serious relationship; number of partners last year) MANOVA with diagnostic group (ADHD, Comparison) as a between-subjects factor and grade at which

girls started to date one-on-one, grade at which girls started dating one person regularly, grade at which girls started a serious relationship with a boyfriend or girlfriend, lifetime number of dating partners, and number of dating partners in the last year as dependent measures was significant, $F(1,120) = 2.92, p < .02$. This analysis was followed by a MANCOVA to address the potential effects of IQ, socioeconomic status (SES), and adolescent conduct disorder (CD) and oppositional defiant disorder (ODD) diagnosis on the dependent relationship variables; this MANCOVA yielded $F(4,108) = 5.44, p < .03$. None of these factors had a significant effect on any of the dependent relationship variables.

Given the significance of the multivariate analyses, I followed-up with a series of univariate ANOVAs. Results of an ANOVA with initiation of early dating behavior as the dependent variable indicated a marginally significant effect, $F(1, 148) = 3.74, p = .055$. A parallel follow-up ANCOVA with IQ, SES, and adolescent CD and ODD diagnosis entered as covariates was significant, $F(1, 136) = 4.67, p < .04$. On average, girls with ADHD initiated dating behavior earlier than comparison girls ($d = .33$).

An ANOVA with grade at which girls started to date one person regularly as the dependent variable indicated no significant difference between girls with ADHD and comparison girls, $F(1, 138) = 2.36, ns$. In parallel, an ANOVA with grade at which girls started a serious relationship as the dependent variable also indicated no significant difference between girls with ADHD and comparison girls, $F(1, 123) = 0.26, ns$.

An ANOVA with lifetime dating partners as the dependent variable was significant, $F(1, 163) = 11.08, p < .001$. A parallel follow-up ANCOVA with IQ, SES, and adolescent CD and ODD entered as covariates was also significant, $F(1, 151) = 4.83, p < .03$. Girls with ADHD had nearly twice as many lifetime dating partners than comparison girls on average ($d = .57$). In contrast, a parallel ANOVA examining number of dating partners in the last year as the dependent variable was non-significant, $F(1, 163) = 0.00, ns$. Means were nearly identical (see Table 1 for means, standard deviations, and effect sizes for relationship engagement variables).

In summary, girls with ADHD initiated dating behavior earlier and had approximately twice as many dating partners across their lifetime than did comparison girls. There were no differences between girls with and without ADHD on age of initiation of more serious dating behavior or number of dating partners in the past year.

Hypothesis 1c: A chi-squared test comparing the proportion of ADHD girls vs. comparison girls privately reporting current involvement in a romantic relationship was significant, $\chi^2 = 13.6, p < .001$. As hypothesized, girls with ADHD (55/87) were more likely than comparison girls (35/62) to report privately in the lab that they were currently involved in a romantic relationship. A parallel finding regarding public reports on personal webpages emerged, $\chi^2 = 4.34, p < .04$: As expected, girls with ADHD (30/62) were more likely than comparison girls (20/56) to publically report current involvement in a romantic relationship.

Hypotheses 1d and 1e: A 2 (Group: ADHD, Comparison) X 5 (Sexual behavior: intimate behavior; age oral sex given; age oral sex received; age intercourse; frequency of condom use) MANOVA with diagnostic group (ADHD, Comparison) as the between-subjects variable and level of intimate sexual behavior, age of onset of giving oral sex, age of onset of receiving oral sex, age of onset of sexual intercourse, and frequency of condom use as the dependent variables revealed no significant group main effect, $F(1, 76) = 0.681, ns$. Thus, it appears that ADHD girls and their comparison peers are participating in non-significantly different levels of intimate sexual behavior and are using condoms, on average, only “some of the time” (see Table 2 for means, standard deviations, and effect sizes for sexual behavior variables).

Girls with ADHD and comparison girls were both highly likely to have already been involved in intimate sex acts; 78% of both groups of girls reported having already had oral sex or sexual intercourse. A chi-squared test was performed comparing the proportion of ADHD girls vs. comparison girls having early involvement in sexual intercourse. The test indicated a marginally significant effect: Girls with ADHD (27/92) were more likely to show involvement in sexual intercourse at or before age 15 relative to comparison girls (15/69), $\chi^2 = 3.13, p = .077$.

Hypothesis 2:

To determine whether girls with ADHD had romantic relationships characterized by negativity, a MANOVA was used to examine group differences between girls with ADHD and comparison girls with respect to relationship stability, support, conflict, and satisfaction. A second MANOVA was used to assess group differences with respect to frequency and severity of perpetration of and victimization by relationship aggression and violence. A third MANOVA was used to ascertain group differences with respect to public positive and negative descriptions of partner, public support and aggression from partner, and extent to which partner was included in photos on personal webpages. To address the potential effects of covariates, each significant MANOVA was followed by a MANCOVA. Each significant MANCOVA was followed by a series of ANOVAs to assess the effect of ADHD on each of the dependent variables, and each significant ANOVA was followed by an ANCOVA to control for the effects of covariates.

Hypotheses 2a, 2b, 2c, & 2d: A MANOVA with diagnostic group (ADHD, Comparison) as the between-subjects variable and average relationship duration, current relationship duration, positive relationship composite, negative relationship composite, and relationship status satisfaction as the dependent variables was non-significant, $F(1, 101) = 0.655, ns$. There were no significant differences between girls with ADHD and comparison girls on any of the relationship stability, quality, or satisfaction variables. Also, there appear to be no differences between ADHD and comparison girls on relationship stability in the early adult years, as indexed by relationship duration. Additionally, There were also no differences in ADHD vs. comparison girls' private conceptions of negative factors in their romantic relationships, as both ADHD and comparison girls reported feeling largely positive about their relationships. Finally, there was no support for the hypothesis that girls with ADHD are less satisfied with their romantic relationships than comparison girls, as both girls with ADHD and comparison girls who were in a relationship appeared to be quite satisfied with that fact (see Table 3 for means, standard deviations, and effect sizes for the relationship stability, quality, and satisfaction variables).

Hypothesis 2e: A MANOVA with diagnostic group (ADHD, Comparison) as the between-subjects variable and severity of perpetrated romantic relationship aggression and violence, frequency of perpetrated romantic relationship aggression and violence, severity of victimization by romantic relationship aggression and violence, and frequency of victimization by romantic relationship aggression and violence as the dependent variables was marginally significant: $F(1, 156) = 2.27, p = .064$. A MANCOVA addressing the potential effects of IQ, SES, and adolescent CD and ODD diagnosis on the relationship aggression variables was non-significant, $F(4, 138) = 1.17, ns$. Including covariates maintained the significant effect of ADHD on frequency of relationship aggression victimization ($F(4, 138) = 4.18, p < .05$) and a marginally significant effect of ADHD on frequency of relationship aggression perpetration ($F(4, 138) = 3.51, p = .063$). Although none of the covariates had a significant effect on the relationship aggression variables, their inclusion reduced the effect of ADHD to marginal significance for severity of perpetrated aggression, $F(4, 138) = 3.29, p = .072$, and severity of

aggression victimization, $F(4, 138) = 3.73, p = .055$. Although girls with ADHD appeared to be more likely than comparison girls to both perpetrate and be victims of more severe forms of relational aggression and violence and to be more frequent victims of aggression in their romantic relationships, this finding is at least partially explained by other factors, particularly CD or ODD diagnosis (see Table 4 for means, standard deviations, and effect sizes for the relationship aggression and violence variables).

Hypothesis 2f: A MANOVA with diagnostic group (ADHD, Comparison) as the between-subjects variable and positive statements about partner, negative statements about partner, public partner support, public partner aggression, and romantic partner photo inclusion on webpages as the dependent variables was non-significant, $F(1, 47) = 0.793, ns$. Specifically, contrary to hypotheses, girls with ADHD did not make fewer positive or more negative statements publically about their partners than did comparison girls. Similarly, girls with ADHD did not receive less public support or more public aggression from their partners than did comparison girls. Finally, girls with ADHD did not have a smaller percentage of photos of them and their romantic partner on their personal webpage than comparison girls did (see Table 5 for means, standard deviations, and effect sizes for public relationship variables).

Hypothesis 3

To determine whether engaging in romantic relationships affected girls' psychological symptoms, a series of hierarchical regressions were performed, examining the relative effects of childhood ADHD diagnosis, childhood levels of internalizing problems, childhood levels of externalizing problems, number of dating partners in adolescence, and involvement in positive early adult romantic relationships on psychological well-being in early adulthood.

Hypothesis 3a: A multiple regression analysis was performed with (1) parent-rated childhood externalizing behavior, (2) childhood ADHD diagnosis, and (3) number of romantic partners in adolescence, as well as the interaction between ADHD diagnosis and number of romantic partners in adolescence, entered hierarchically as predictors, with the early adult externalizing behavior composite as the criterion variable. Childhood externalizing behavior ($\beta = .575, p < .001$) was a significant predictor of early adult externalizing behavior. After controlling for levels of childhood externalizing behavior, childhood ADHD diagnosis ($\beta = .111, ns$) did not significantly predict adult externalizing behavior (as would be expected, given the high correlation between childhood ADHD diagnosis and childhood externalizing behavior). However, even after controlling for childhood levels of externalizing behavior and ADHD diagnosis, number of romantic partners in adolescence ($\beta = .325, p < .03$) was a significant predictor of early adult externalizing behaviors. The interaction between ADHD diagnosis and number of romantic partners in adolescence ($\beta = -.133, ns$) did not achieve significance.

In an additional regression analysis, the significant contribution of number of adolescent dating partners to early adult externalizing behavior was maintained even after controlling for IQ, SES, age, adolescent externalizing behavior, medication status, and adolescent CD and ODD diagnosis. Of these covariates, only adolescent externalizing behavior ($\beta = .416, p < .001$) significantly predicted early adult externalizing behavior (see Table 6 for beta weights and incremental R^2 values for variables of interest).

A parallel multiple regression analysis was performed controlling for parent-rated childhood internalizing behavior with the early adult internalizing behavior composite as the criterion variable. Childhood internalizing behavior ($\beta = .490, p < .001$) was a significant predictor of early adult internalizing behavior. After controlling for levels of childhood

internalizing behavior, childhood ADHD diagnosis ($\beta = -.087, ns$) did not significantly predict adult internalizing behavior. In contrast to the pattern seen with regards to the influence of dating on the development of externalizing behavior, after controlling for childhood levels of internalizing behavior and ADHD diagnosis, number of romantic partners in adolescence ($\beta = -.041, ns$) was not a significant predictor of early adult internalizing behaviors. The interaction between ADHD diagnosis and number of romantic partners in adolescence ($\beta = .079, ns$) was also not significant. A parallel regression analysis controlling for IQ, SES, age, adolescent internalizing behavior, medication status, and adolescent CD and ODD diagnosis indicated that adolescent internalizing behavior ($\beta = .187, p = .053$) and medication status ($\beta = .159, p = .074$) were marginally significant predictors of later internalizing problems, and all other covariates were not significantly correlated with later outcomes. Controlling for these factors did not change the non-significant effect of number of dating partners on internalizing symptoms.

In sum, girls who engaged in more romantic relationships in adolescence had more increases in externalizing psychopathology over time, but contrary to hypotheses, this relationship was not moderated by ADHD status. Girls involved in higher numbers of romantic relationships in adolescence did not show analogous increases in internalizing psychopathology over time. Girls with ADHD were also not at risk for increased internalizing behavior in early adulthood after controlling for childhood levels of internalizing psychopathology.

Hypothesis 3b: A multiple regression analysis was performed with (1) parent-rated childhood externalizing behavior, (2) childhood ADHD diagnosis, and (3) positive early adult romantic relationship, as well as the interaction between ADHD and positive early adult romantic relationship, entered hierarchically as predictors, with early adult externalizing behavior as the criterion variable. Childhood externalizing behavior ($\beta = .525, p < .001$) was a significant predictor of early adult externalizing behavior, and after controlling for levels of childhood externalizing behavior, childhood ADHD diagnosis ($\beta = .124, ns$) again did not significantly predict adult externalizing behavior. However, after controlling for childhood levels of externalizing behavior and ADHD diagnosis, having a positive romantic relationships in early adulthood ($\beta = -.220, p < .03$) negatively predicted levels of early adult externalizing behavior. The interaction between ADHD diagnosis and positive early adult romantic relationship ($\beta = -.046, ns$) did not predict early adult externalizing behavior. Controlling for IQ, SES, age, adolescent externalizing behavior, medication status, and adolescent CD and ODD diagnosis indicated that only adolescent externalizing behavior ($\beta = .419, p < .001$) significantly predicted later externalizing problems, while all other covariates were not significantly correlated with later outcomes. The effect of positive romantic relationship status in early adulthood on early adult externalizing symptoms remained significant ($\beta = -.208, p < .002$) after controlling for all covariates (see Table 7 for beta weights and R^2 contributions for variables of interest).

A parallel multiple regression analysis was performed, controlling for parent-rated childhood internalizing behavior, with early adult internalizing behavior as the criterion variable. Childhood internalizing behavior ($\beta = .482, p < .001$) significantly predicted early adult externalizing behavior, and after controlling for levels of childhood internalizing behavior, childhood ADHD diagnosis ($\beta = .091, ns$) again did not significantly predict adult internalizing behavior. However, after controlling for childhood levels of internalizing behavior and ADHD diagnosis, having a positive early adult romantic relationship ($\beta = -.230, p < .03$) negatively predicted early adult internalizing behavior. The interaction between ADHD diagnosis and positive early adult romantic relationship ($\beta = -.022, ns$) did not predict early adult internalizing behavior. Controlling for IQ, SES, age, adolescent internalizing behavior, medication status, and

adolescent CD and ODD diagnosis indicated that adolescent internalizing behavior ($\beta = .186, p = .057$), IQ ($\beta = .160, p = .074$), and medication status ($\beta = .148, p = .089$) were marginally significant predictors of later internalizing problems, while all other covariates were not significantly correlated with later outcomes. Positive romantic relationship status in early adulthood ($\beta = -.229, p < .04$) continued to be significantly (and negatively) correlated with early adult internalizing symptom levels after controlling for these covariates (see Table 8 for beta weights and R^2 contributions of the variables of interest).

To summarize, the findings indicate that girls who were involved in a positive romantic relationship in early adulthood had lower concurrent levels of both externalizing and internalizing psychopathology in adulthood. As expected, the association between positive romantic relationship involvement and lower symptom levels was not moderated by ADHD status.

Hypothesis 4

To assess whether girls who lacked social support from parents or peers or had low self-worth in childhood engaged in higher numbers of romantic relationships in adolescence and had more early adult psychopathology, independent of ADHD status, a mediational analysis using multiple regression was conducted examining the relationships between baseline levels of self-concept, parental support, peer rejection, and early adult externalizing and internalizing symptoms.

A multiple regression analysis was performed with (1) parent-rated childhood externalizing behavior, (2) childhood ADHD diagnosis, and (3) childhood self-concept, childhood peer rejection, and parent-child relationships in childhood, as well as the interactions between ADHD diagnosis and childhood self-concept, ADHD and childhood peer rejection, and ADHD and parent-child relationships, entered sequentially as predictors, with the early adult externalizing behavior composite as the criterion variable. After controlling for the significant contribution of childhood externalizing behavior ($\beta = .640, p < .0005$), neither childhood ADHD diagnosis ($\beta = -.115, ns$), childhood self-concept ($\beta = .068, ns$), nor parent-child relationships in childhood ($\beta = .030, ns$) contributed significantly to early adult externalizing behavior. However, even after controlling for childhood levels of externalizing behavior and childhood ADHD diagnosis, childhood peer rejection significantly predicted early adult externalizing behavior ($\beta = -.257, p < .03$). The interactions between ADHD diagnosis and childhood self-concept ($\beta = .112, ns$), ADHD and childhood peer rejection ($\beta = .127, ns$), and ADHD and parent-child relationships in childhood ($\beta = .038, ns$), did not significantly predict early adult externalizing behavior. A follow-up regression controlling for the effects of medication status, SES, IQ, age, adolescent CD and ODD diagnosis, and peer rejection in adolescence indicated no significant contributions of any of these factors to externalizing behavior and did not change the significance levels of the prior analysis. Thus, the primary factors that appear to lead to higher levels of adult externalizing behavior are higher childhood levels of externalizing symptoms and increased childhood peer rejection (i.e., lower childhood social preference ratings). See Table 9 for results of the regression analysis.

A second multiple regression analysis was performed with (1) parent-rated childhood internalizing behavior, (2) childhood ADHD diagnosis, and (3) childhood self-concept, childhood peer rejection, and parent-child relationships in childhood, as well as the interactions between ADHD diagnosis and childhood self-concept, ADHD and childhood peer rejection, and ADHD and parent-child relationships in childhood, entered sequentially as predictors, with the

early adult internalizing behavior composite as the criterion variable. After controlling for the significant contribution of childhood internalizing behavior to early adult internalizing behavior ($\beta = .534, p < .0005$), neither childhood ADHD diagnosis ($\beta = -.455, ns$), childhood self-concept ($\beta = -.194, ns$), childhood peer rejection ($\beta = -.131, ns$), parent-child relationships in childhood ($\beta = -.013, ns$), interaction between ADHD and childhood self-concept ($\beta = .562, ns$), interaction between ADHD and childhood peer rejection ($\beta = .036, ns$), nor interaction between ADHD and parent-child relationships ($\beta = -.047, ns$) significantly predicted early adult internalizing behavior. Although IQ was significantly positively associated with adult levels of internalizing problems ($\beta = .295, p < .004$), including all covariates (IQ, SES, medication status, age, adolescent CD and ODD diagnosis, and peer rejection in adolescence) in the analysis did not alter significance levels from the prior analysis. In contrast to its contribution to early adult externalizing behavior, childhood peer rejection does not appear to analogously predict early adult internalizing behavior, nor do any of the other baseline factors appear to contribute to increases in internalizing behavior from childhood to early adulthood (see Table 10 for results of analysis).

To determine whether number of dating relationships in adolescence mediated the demonstrated relationship between childhood peer rejection and childhood externalizing behavior, a mediational analysis was performed. Following the analysis in which childhood externalizing behavior, childhood ADHD diagnosis, and childhood peer rejection were entered sequentially as predictors, with early adult externalizing behavior composite as the criterion variable—which revealed that childhood peer rejection was a significant predictor of early adult externalizing behavior—I conducted a second multiple regression analysis with childhood externalizing behavior, childhood ADHD diagnosis, number of adolescent dating relationships, and childhood peer rejection entered sequentially as predictors. Controlling for childhood externalizing behavior and ADHD diagnosis, number of dating relationships significantly predicted levels of early adult externalizing behavior ($\beta = .235, p < .001$), and furthermore, childhood peer rejection was reduced to marginal significance ($\beta = -.127, p = .07$).

A third regression with childhood externalizing behavior, childhood ADHD diagnosis, and childhood peer rejection entered sequentially as predictors and number of adolescent dating relationships as the criterion variable indicated that, after controlling for childhood externalizing behavior and ADHD diagnosis, childhood peer rejection did not significantly predict number of adolescent dating relationships ($\beta = .071, ns$). This pattern suggests that although including number of adolescent romantic relationships did reduce the contribution of childhood peer rejection to early adult externalizing behavior, childhood peer rejection did not predict number of adolescent romantic relationships. In order for mediation to hold, the predictor (childhood peer rejection) must significantly relate to the putative mediator (number of adolescent relationships) and the mediator must significantly relate to the criterion (early adult externalizing behavior); in addition, including the mediator in the regression analysis must reduce the correlation between the predictor and the criterion variables (Baron & Kenny, 1986).

In sum, childhood peer rejection and number of adolescent dating relationships both significantly predicted early adult externalizing behavior. However, childhood peer rejection did not significantly predict number of adolescent dating relationships. It thus follows that number of adolescent romantic relationships does not mediate the relationship between childhood peer rejection and early adult externalizing behavior.

DISCUSSION

In the current study I compared the romantic relationships of young adult women with ADHD to those of their non-ADHD peers. In addition, a major focus was to determine the effect of engaging in romantic relationships on the psychological functioning of young adult women with ADHD: Do romantic relationships serve a protective function for these girls, or do they predict higher levels of psychological symptoms? Specifically, I expected that (1) girls with ADHD would engage in a greater number of romantic relationships and more intense sexual behavior than would comparison girls; (2) girls with ADHD would engage in romantic relationships that were more negative than those of the comparison sample; (3) engaging in romantic relationships would affect girls' psychological symptoms, with excessive relationship engagement predicting increases in symptoms and positive relationship engagement predicting decreases in symptoms, and (4) girls who lacked social support, had conflicted family relationships or had low perceived self-worth in childhood would engage in a greater number of romantic relationships in adolescence and show more psychopathology in early adulthood.

Hypothesis 1, regarding differences in engagement in romantic relationships and sexual behavior between ADHD and comparison girls, was partially supported. In contrast to findings in adolescence, girls with ADHD were no more likely to initiate dating at an earlier age. However, girls with ADHD showed a marked increase in lifetime dating partners relative to comparison girls, reporting having nearly twice as many boyfriends/girlfriends since they started dating. The majority of girls, regardless of ADHD diagnosis, had already been involved in intimate sex acts, and ADHD did not have an effect on the intensity of reported sexual behaviors. At a marginally significant level, girls with ADHD were more likely to have had sexual intercourse for the first time before age 15 than were comparison girls. Girls with ADHD were also more likely than comparison girls to be currently involved in a romantic relationship.

Hypothesis 2, regarding greater negativity in romantic relationships for girls with ADHD, was partially supported. Contrary to hypotheses, girls with ADHD did not have shorter relationships in adolescence than did comparison girls. There were also no differences in relationship stability for girls with ADHD vs. comparison girls in early adulthood. The general absence of differences between the relationships of girls with vs. without ADHD suggests that ADHD and comparison girls seem to have similar privately held conceptions about the quality of their romantic relationships, and both groups feel quite positive about their current romantic relationships overall.

Regardless of ADHD diagnosis, girls in relationships were happier with their relationship status than girls who were single. Girls with ADHD did not display fewer positive descriptions of their romantic partners and more negative descriptions of their romantic partners on their personal webpages than did comparison girls. Girls' relationships, as indexed by partner comments and photos on girls' webpages, also appeared to be quite similar across diagnostic groups, and there did not appear to be a general tendency for girls with ADHD to focus excessively on their partner or relationship (rather than themselves) on their personal webpages.

Despite reporting feeling quite good about their relationships, girls with ADHD demonstrated more aggression and violence in their romantic relationships than comparison girls, at a marginally significant level. This finding appears to be related at least in part to CD and ODD, which co-occurs more frequently in girls with ADHD than in comparison girls. Girls with comorbid ADHD and CD/ODD were the perpetrators of more serious aggressive and violent acts against their partner than were comparison girls or girls with ADHD only. However, girls with ADHD and CD/ODD engaged in aggressive acts against their partners no more frequently than comparison girls with or without CD/ODD and girls with ADHD only. Thus, both girls with

ADHD and comparison girls, particularly those with CD or ODD diagnoses, appeared to perpetrate aggression in the context of their romantic relationships with some regularity, but girls with comorbid ADHD and CD/ODD tended to perpetrate acts against their partners that were more serious (e.g., hitting instead of teasing). Girls with comorbid ADHD and CD/ODD were also victimized both more frequently and more severely by their romantic partners.

Hypothesis 3 was partially supported. After controlling for levels of childhood externalizing behavior and childhood ADHD diagnosis, the number of romantic partners in adolescence was a significant predictor of increased early adult externalizing behavior. Although prior data (acquired during mid-adolescence) indicated an interaction between ADHD and number of romantic partners on psychological symptoms in adolescence, a different pattern emerged in early adulthood. Girls who engaged in greater numbers of romantic relationships in adolescence showed more increases in externalizing psychopathology by early adulthood, regardless of ADHD status. In contrast, girls who engaged in a greater number of romantic relationships in adolescence did not show analogous increases in internalizing psychopathology over time. Furthermore, childhood ADHD status did not appear to contribute to increases in internalizing problems from childhood to early adulthood, beyond the contributions ADHD may make to childhood levels of internalizing problems.

Positive relationships in early adulthood were, as expected, associated with lower levels of psychological symptoms. Girls who reported being satisfied with their romantic relationships and whose relationships were characterized by high support, secure attachment, low conflict, and low aggression showed fewer externalizing and internalizing symptoms in early adulthood than those without such positive relationship qualities. Although girls with ADHD had higher levels of early adult externalizing behavior and internalizing behavior than comparison girls, there was no interaction between ADHD diagnosis and relationship quality: girls in positive relationships showed decreases in externalizing and internalizing psychopathology over time, regardless of ADHD diagnosis, in contrast to the increases seen in girls who engaged in excessive numbers of relationships in adolescence or adulthood.

Hypothesis 4 was partially supported. Childhood peer rejection, and not childhood self-concept or parent-child relationships, contributed significantly to early adult externalizing behavior. Although girls with ADHD were highly likely to suffer from peer rejection in childhood, girls who were peer rejected, regardless of ADHD diagnosis, experienced increases in externalizing behavior—but not internalizing behavior—in early adulthood. Childhood peer rejection did not significantly predict number of adolescent dating relationships, indicating that the association between childhood peer rejection and early adult externalizing behavior is not fully mediated by excessive engagement in adolescent romantic relationships. This pattern of results provides some evidence for indirect linkages between childhood peer rejection and early adult externalizing behavior.

The results of this study are simultaneously distressing and hopeful. In large part, they suggest that girls with ADHD are more similar to comparison girls by early adulthood with respect to their relationships than might be expected given their substantial peer relationship deficits earlier in life. The tendency for girls with ADHD to have more dating partners may be limited to middle adolescence, and by late adolescence to early adulthood, their dating behavior is roughly parallel to that of their non-ADHD peers.

Two very different possibilities may explain this finding. Like comparison girls, girls with ADHD may be engaging in increasingly stable, longer-term relationships as they age. Alternatively, it may still be that girls with ADHD are increasingly rejected due to their

continued social skills deficits as they progress through adolescence and as expectations rise for commitment, support, and intimacy in dating relationships—and that this combination of events leads to their involvement in fewer dating relationships as they age. In other words, their difficulty with peer relationships may manifest itself in difficulty in dating relationships as well, particularly as the standards for these relationships increase across adolescence. However, the tendency for their relationships to be longer-lasting than earlier in adolescence, and the similarity in length of relationships for girls with and without ADHD, suggest that girls with ADHD are able to maintain dating relationships as well as their comparison peers. Still, because research indicates that a number of disparate factors—such as involvement in a steady relationship, substance use, peer delinquency, and sexually permissive attitudes—contribute to adolescent relationship quality and early involvement in sexual behavior (Collins, 2003; Whitbeck, Yoder, Hoyt, & Conger, 1999; Zani & Cicognani, 2006), the similar numbers of dating partners and involvement in sexual behavior across groups in early adulthood may belie different underlying processes.

Engaging in large numbers of romantic relationships in adolescence continues to predict externalizing problems, extending to early adulthood. In contrast to patterns seen in adolescence, where the negative effects of excessive romantic relationship engagement were primarily limited to girls with ADHD/C, the association between number of romantic partners in adolescence and early adult externalizing behavior is no longer moderated by ADHD status, extending to the entire sample. Importantly, the measurement of high engagement in relationships and externalizing behavior into two separate time periods (mid-adolescence vs. late adolescence/early adulthood) allows for a more causal inference to be drawn: dating numerous partners in adolescence puts girls at risk for negative psychological effects later, by early adulthood.

Although data on the quality of the girls' romantic relationships in adolescence is limited in our sample, it may well be that the effects of excessive relationship engagement in adolescence on early adult symptomatology are primarily a result of negative relationship engagement, rather than simply multiple partners. This contention is supported by the differential effects of positive vs. negative romantic relationships on internalizing and externalizing psychopathology in early adulthood. Because positive relationships are associated with positive outcomes for both girls with ADHD and their non-ADHD peers, part of the contribution of excessive relationship engagement in adolescence to externalizing problems in adulthood may be the relatively poorer quality of these more frequent—and thus, by definition, less stable—relationships. Regardless, the interaction between ADHD status and adolescent dating behavior on psychological symptoms appears to have decreased substantially by early adulthood.

Despite the similarities seen between the romantic relationships and sexual behavior of ADHD and non-ADHD girls in the present findings, it should not be concluded that those relationships are all good. Indeed, there are a number of quite negative findings in this study. Although most girls reported having substantial positive feelings about their romantic partners, relatively few girls (21% comparison, 14% ADHD) in either group were participating in positive relationships as defined by the current study, in contrast to the large number whose relationships were seriously impaired with respect to girls having substantial negative feelings about their partner, high levels of relationship aggression, insecure attachment, and/or lack of positive relationship factors such as support, trust, and good communication. Girls in general are clearly at risk for participation in negative relationships in early adulthood. Although a causal relationship between positive relationship engagement and low levels of young adult

symptomatology cannot be asserted, young adults rely heavily on their romantic relationships for support, and it seems crucial that they engage in relationships that are as positive as possible. Interventions based on improving relationship quality may be helpful not only in increasing partner support but also in reducing psychological symptoms

Sexual behavior also normalizes between groups as adulthood approaches. Girls with ADHD had not participated in more intimate sexual behavior at early adulthood than comparison girls, nor were there differences between ADHD and comparison girls in average age of onset of giving oral sex, receiving oral sex, or sexual intercourse. This pattern of results suggests that whereas a higher proportion of girls with ADHD may be involved in sex acts early on (before age 15), a higher proportion may also showing a sexual delay relative to their non-ADHD peers, in line with ADHD type differences seen by Canu and Carlson (2003). Regardless, by early adulthood, comparison girls and ADHD girls have become equally—and extensively—involved in sexual behavior. Although such behavior is therefore assumed to be normative, girls who participate in sexual behavior are not necessarily joyfully reveling in their newfound healthy sexuality. Indeed, they are simultaneously at risk for sexually transmitted diseases, pregnancy, and emotional distress. Girls in the current study report using condoms only some of the time when sexually active, including during non-monogamous sexual contact. Although girls with ADHD were no less likely to use condoms than comparison girls, this general trend against regular condom use represents a clear danger to young women, as well as their partners, and should be addressed.

At the same time, it is clear that girls with ADHD are continuing to show deficits associated with romantic relationships analogous to those that these girls have in other domains—and that they remain at increased risk in these relationships. Perhaps the most distressing difference persisting between girls with ADHD and the comparison girls with regard to relationships in early adulthood is the tendency for girls with comorbid ADHD and CD/ ODD to fall victim to more severe, more frequent violence and aggression, as well as to perpetrate more severe violence than their non-ADHD peers. Furthermore, 28% of the comparison girls reported being the victim of at least one violent act or serious violent threat in their relational history. Thus, many girls without ADHD are already the victims of relational violence at such a young age, and the increased risk that is present in the ADHD population (43% in our sample experiencing at least one violent act or serious violent threat) is extremely serious. Recent surveys indicate that over 2 million people a year are physically assaulted by their partner in the United States alone (Tjaden & Thoennes, 2000), and being a victim or perpetrator of relationship aggression and violence in adolescence is a risk factor for continuing involvement in relationship violence in adulthood (Ozer, Tschann, Pasch, & Flores, 2004). Although this study was not designed specifically to examine the factors that may underlie the increased tendency for girls with ADHD to be the victims of violence, it may be that these girls' impulsivity in choosing a partner, or increased tendency to choose a delinquent partner, could lead to an increased risk of becoming a victim of relationship violence. The tendency to perpetrate more severe violence seen in girls with comorbid ADHD and CD/ODD may be a continuation of the increased aggression seen in this population in childhood (Hinshaw, 2002), as well as a symptom of reduced communication quality due to impaired verbal skills relative to their peers. Another possibility is that impulsivity in partner choice leads to affiliation with partners who are a poorer fit, thereby making conflict more serious.

Still, girls and young women with ADHD do not report subjectively feeling worse about their partners than do the comparison girls. This finding may indicate a decreased standard on the

part of girls with ADHD regarding their assessments of their partners. Such lowering of standards may contribute to other findings in the current study: for example, that girls with ADHD are less frequently involved in positive relationships than comparison girls, and that psychological symptoms (especially of the externalizing type) are associated with negative relationship engagement.

It is not yet clear whether some of the findings represent positive or negative outcomes for girls with ADHD. Girls with ADHD have fewer friends and may need to rely more on their relationships for support compared to girls without ADHD. Although girls with ADHD largely report that their relationships are similar to those of their comparison peers, the increased aggression and violence seen in the relationships of the girls with comorbid ADHD and CD/ODD is a significant negative relationship factor in this population. Girls with ADHD thus remain at risk for more negative relationships and higher psychological symptom levels later in life.

On the other hand, in addition to generally having strong positive feelings about their partners, the ADHD sample displayed their relationships proudly on their public webpages and talked about them in public and private in a largely positive way. It is a remarkably hopeful finding that the girls who are able to engage in positive romantic relationships appear to also be protected from a broad range of psychological symptoms in early adulthood, and that this finding was as true for girls with ADHD as for the comparison group.

It should be noted that girls with ADHD continue to be more impaired with respect to levels of internalizing and externalizing psychopathology in early adulthood than are their non-ADHD peers. Thus, although positive relationships are as associated with reductions in internalizing and externalizing symptoms in an absolute sense for girls with ADHD as they are for girls without ADHD, girls with ADHD who are in positive relationships do not show complete symptom reduction. Instead, girls with ADHD who are in positive relationships have symptom levels similar to comparison girls in somewhat negative romantic relationships. However, given that somewhat negative romantic relationships are the norm for this age group, this represents a reduction in internalizing and externalizing symptoms for girls with ADHD in positive relationships to a normative, though slightly elevated, level. This is impressive, given that without positive relationships, girls with ADHD remain moderately impaired by externalizing and internalizing symptoms in early adulthood. However, it does not match the excellent outcome seen in comparison girls in positive relationships, who have impressively low levels of externalizing and internalizing symptoms and appear on the whole to be thriving. This pattern is analogous to other work on resilience in other domains in this sample, which suggests that even girls with ADHD who gain competence in one or more domains remain largely impaired relative to their peers in numerous other domains, such as peer relationships or academic functioning (Owens, Hinshaw, Lee, & Lahey, 2009).

In addition, the contributions of ADHD to internalizing pathology appear to be reduced by early adulthood. Girls with ADHD are not at risk for increased internalizing behavior in early adulthood after controlling for childhood levels of internalizing psychopathology, although these childhood internalizing problems may well have been influenced by early ADHD symptoms. The fact that girls with ADHD, like comparison girls, show increased psychological well-being when they engage in positive romantic relationships is heartening. Because romantic relationship quality and internalizing and externalizing outcomes are all measured at the same time point, early adulthood, and we have little data about the quality of romantic relationships in adolescence, we can not make a causal inference about the potential protective nature of positive

romantic relationships on psychological symptoms. Furthermore, the significant contributions of adolescent internalizing and externalizing symptoms to later outcome suggest that adolescent symptoms may cause problems with maintaining positive relationships in adulthood, in addition to whatever protective nature these relationships themselves may reciprocally have on symptomatology.

Regardless, it is clear that girls who are doing well psychologically are also more likely to have positive romantic relationships, and this is an important finding with implications for intervention development. Especially if engagement in positive relationships in fact serves a protective function, couples-based interventions aimed at improving romantic relationships may be particularly helpful for young women with ADHD. This group is at higher risk both for relationship aggression, which couples-based interventions could address directly, and higher levels of psychological symptomatology, which might be lowered indirectly via improvements in relationship quality. Improving romantic relationships in adolescence might also reduce the number of different partners girls are dating in adolescence and thereby further reduce levels of externalizing symptoms in early adulthood.

It is also important to note that, in contrast to findings by Woodward et al (2004), CD does not appear to be driving the effects of excessive adolescent romantic relationship engagement or positive relationship engagement on early adult psychopathology in our sample. Instead, girls who engage in excessive numbers of dating relationships in adolescence appear to be at risk for later increases in pathology, and girls who are involved in positive relationships in early adulthood appear to be protected from high levels of psychopathology, independent of CD, ODD, or ADHD diagnosis. Although childhood and adolescent levels of externalizing and internalizing behavior also predict adult problems in these domains, and although adolescent externalizing behavior appears to be highly correlated with excessive dating behavior, it nonetheless appears that even girls without a diagnosis of CD, ODD, or ADHD are potentially at risk for later externalizing problems as a result (at least partially) of excessive dating behavior. Interventions aimed at improving this behavior across the population are thus indicated. At the same time, it is still the case that ADHD girls are at additional risk given their high childhood levels of similar problems, and they may be most in need of such intervention.

Girls who are rejected by peers in childhood are known to suffer from a range of problems later in life, including social rejection and depression in adolescence (Blachman & Hinshaw, 2002; Cicchetti & Cohen, 2006; Rubin, Bukowski, & Parker, 2006). This appears to be true in the current sample as well, independent of ADHD diagnosis. Still, whereas childhood peer rejection has a similar sized effect on long-term outcomes in both groups, girls with ADHD tend to face more social rejection early in life than do comparison girls. For this reason, among others, girls with ADHD remain at higher risk with respect to internalizing and externalizing symptoms later in life. Interventions aimed at improving social skills and reducing social rejection are thus crucial in improving psychological outcomes in girls and may be particularly important for girls with ADHD.

Although this study elucidated some clear effects of ADHD diagnosis, childhood peer rejection, and adolescent romantic relationships on early adult psychological well-being, it did not support the prediction that peer rejection in childhood would lead to pathology in adulthood *via* increased numbers of dating partners in adolescence. Girls who are rejected by their peers in childhood may indeed be particularly motivated to engage in dating relationships in adolescence, perhaps as a way to gain support or acceptance; they may make poor choices of romantic partners or become quickly rejected by romantic partners as well as peers because of their

ADHD symptoms or personality characteristics. However, such tendencies do not appear to lead to a significantly larger number of dating relationships in adolescence on average for girls who are more peer rejected. This may be because these girls, although motivated to affiliate with romantic partners, may nonetheless be frequently rejected before these partnerships can begin. Thus, there must be some other pathway that leads from peer rejection to increased early adult externalizing behavior, such as continued social rejection by partners or peers or affiliation with deviant peers in adolescence, which parallels the pathway leading from excessive adolescent dating engagement to increased early adult externalizing behavior and leaves girls who are rejected in childhood at high risk. Future analyses will examine the potential contribution of deviant peer association and negative partner characteristics (e.g., partner delinquency) in the pathway between childhood peer rejection and internalizing and externalizing problems in adulthood, as well as the potential effect of childhood peer rejection on quality of romantic relationships in early adulthood.

One key limitation of this study is that measures were substantially reliant on self-reports. Girls' assessments of their psychological functioning and friendships are correlated with other raters' assessments of these factors (e.g. in adulthood, $r = .44$ for girls' report on the ASR vs. mothers' ratings on the ABC of girls' externalizing symptoms, and $r = .41$ for girls' self-report on the ASR vs. mothers' ratings on the ABC of girls' internalizing symptoms; in adolescence, $r = .31$ for girls' self-report of friendships vs. teacher report on the Social Preference Scale). Girls' self-reports thus seem to be fairly concordant with observer report. In addition, many characteristics of romantic relationships are likely to be somewhat hidden from parents; thus, public information on girls' webpages, including information posted by partners, was used as an additional way to assess relationships instead. These best available data provide valuable insight into the nature of romantic relationships in girls with and without ADHD. Still, partner reports of romantic relationship constructs remain an important resource that has not yet been tapped.

It also may have been difficult for parents and teachers to report on girls' unmedicated behavior because so many of the girls were on daily medication. This may have led to a conservative bias because of underestimates of problem behavior in girls only seen on medication. Girls with ADHD may, in fact, continue to be even more impaired in their unmedicated state.

Finally, a causal relationship between positive romantic relationship engagement and lower levels of internalizing and externalizing symptoms in adulthood cannot yet be determined, as the minimal measurement of relationship quality in adolescence was not sufficient to test whether this factor may cause, rather than simply be associated with, reductions in early adult psychological symptoms. Future analyses will include examination of partner characteristics and attitudes towards romantic relationships to more thoroughly elucidate differences that may be present in the romantic relationships of girls with ADHD and comparison girls as they enter early adulthood.

The current study indicates that romantic relationships continue to be linked with substantial problems that may be particularly impairing for girls with ADHD, and that excessive involvement in these relationships may worsen ADHD symptoms as well as other externalizing problems, such as delinquency. However, I also highlight the association between positive romantic relationships and psychological well-being in early adulthood. In all, this study provides further evidence of the clinical impact of ADHD in girls and the public health importance of this condition. Furthermore, the findings on social and relational mechanisms underlying the development of psychological symptoms in young women have implications for

both social skills interventions that can reduce peer rejection and individual- or couples-based interventions that can minimize excessive dating involvement and improve relationship quality, perhaps through reducing relationship conflict or aggression. In all, this study represents an important step toward understanding the continuing negative impact of childhood ADHD, childhood peer rejection, and excessive adolescent relationship engagement on early adult romantic relationships and well-being.

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Tables

Table 1.

Means, Effect Sizes, and Standard Deviations for Relationship Engagement Variables by ADHD Diagnosis

	M (SD)		<i>p</i> ^a	Effect Size ^b
	ADHD	Comparison		ADHD-Comparison
Initiation of one-on-one dating ^c	9.00 (1.76)	9.55 (1.69)	0.055	0.33
Starting to regularly date one person ^c	9.32 (1.79)	9.78 (1.69)	ns	0.26
Initiation of serious relationship ^c	10.37 (1.85)	10.54 (1.75)	ns	0.09
Lifetime number of partners	6.36 (7.14)	3.34 (3.04)	0.001	0.57
Number of partners in last year	2.35 (2.23)	2.32 (3.86)	ns	0.01

^a Significance: ANOVA

^b Effect size: Cohen's *d*, reflecting contrast of ADHD versus Comparison

^c Grade

Table 2.

Means, Effect Sizes, and Standard Deviations for Sexual Behavior Variables by ADHD Diagnosis

	M (SD)		<i>p</i> ^a	Effect Size ^b
	ADHD	Comparison		ADHD-Comparison
Level of intimate sexual behavior	7.87 (2.26)	8.04 (1.81)	ns	0.08
Onset of oral sex: giving ^c	15.82 (3.55)	16.30 (1.54)	ns	0.18
Onset of oral sex: receiving ^c	16.02 (3.75)	16.43 (1.57)	ns	0.14
Onset of sexual intercourse ^c	16.34 (2.03)	16.19 (1.61)	ns	0.08
Frequency of condom use	1.80 (1.62)	2.07 (1.73)	ns	0.16

^a Significance: ANOVA

^b Effect size: Cohen's *d*, reflecting contrast of ADHD versus Comparison

^c Age (years)

Table 3.

Means, Effect Sizes, and Standard Deviations for Qualitative Relationship Variables by ADHD Diagnosis

	M (SD)		<i>p</i> ^a	Effect Size ^b
	ADHD	Comparison		ADHD-Comparison
Average romantic relationship duration ^c	11.08 (15.74)	7.20 (7.12)	0.075	0.35
Current relationship duration ^c	16.39 (18.84)	12.21 (12.58)	ns	0.26
Positive relationship composite	29.41 (6.62)	27.15 (10.07)	ns	0.27
Negative relationship composite	15.86 (6.63)	14.12 (6.63)	ns	0.26
Satisfaction with relationship status	3.18 (0.77)	3.12 (0.81)	ns	0.08

^a Significance: ANOVA

^b Effect size: Cohen's *d*, reflecting contrast of ADHD versus Comparison

^c Months

Table 4

Means, Effect Sizes, and Standard Deviations for Relationship Aggression Variables by ADHD Diagnosis

	M (SD)		<i>p</i> ^a	Effect Size ^b
	ADHD	Comparison		ADHD-Comparison
Relationship aggression perpetration severity	3.13 (2.34)	2.32 (1.53)	0.02	0.43
Relationship aggression perpetration frequency	9.43 (6.59)	7.90 (5.47)	ns	0.25
Relationship aggression victimization severity	3.62 (2.88)	2.72 (2.53)	0.04	0.33
Relationship aggression victimization frequency	10.80 (8.31)	8.00 (6.94)	0.02	0.37

^a Significance: ANOVA^b Effect size: Cohen's *d*, reflecting contrast of ADHD versus Comparison

Table 5

Means, Effect Sizes, and Standard Deviations for Public Relationship Variables by ADHD Diagnosis

	M (SD)		<i>p</i> ^a	Effect Size ^b
	ADHD	Comparison		ADHD-Comparison
Positive statements about partner ^c	1.39 (1.48)	0.63 (1.12)	0.063	0.42
Negative statements about partner ^c	0.75 (0.84)	0.37 (0.60)	0.096	0.51
Public partner support ^c	0.54 (1.71)	0.21 (0.71)	ns	0.25
Public partner aggression ^c	0.21 (0.79)	0.11 (0.32)	ns	0.17
Romantic partner photo inclusion	2.86 (0.93)	2.68 (0.75)	ns	0.21

^a Significance: ANOVA^b Effect size: Cohen's *d*, reflecting contrast of ADHD versus Comparison^c Number of posts

Table 6.

Hierarchical Multiple Regression Analysis: Number of Adolescent Partners Predicting Early Adult Externalizing Behavior

	<i>B</i>	Std. β	Incremental R^2	Total R^2
Childhood Externalizing Behavior Composite	.187	.258*	.360	.360
Childhood ADHD Diagnosis	1.792	.094	.007	.367
Adolescent Externalizing Behavior Composite	.324	.426***	.099	.466
Number of Romantic Partners in Adolescence	.936	.277*	.032	.498
ADHD x Romantic Partners Interaction	-.416	-.116	.002	.500

* $p < .05$ *** $p < .0005$

Table 7.

Hierarchical Multiple Regression Analysis: Romantic Relationship Quality Predicting Early Adult Externalizing Behavior

	<i>B</i>	Std. β	Incremental R^2	Total R^2
Childhood Externalizing Behavior Composite	.138	.193	.390	.390
Childhood ADHD Diagnosis	2.050	.106	.008	.398
Adolescent Externalizing Behavior Composite	.347	.461***	.110	.508
Early Adult Positive Relationship Status	-5.243	-.208**	.043	.551

** $p < .005$ *** $p < .0005$

Table 8.

Hierarchical Multiple Regression Analysis: Romantic Relationship Quality Predicting Early Adult Internalizing Behavior

	<i>B</i>	Std. β	Incremental R^2	Total R^2
Childhood Internalizing Behavior Composite	.311	.368**	.280	.280
Childhood ADHD Diagnosis	-.323	-.016	.003	.283
Adolescent Internalizing Behavior Composite	.166	.194*	.030	.313
Medication Status	3.646	.141	.019	.332
Early Adult Positive Relationship Status	-5.802	-.217**	.046	.378

* $p < .05$ ** $p < .005$

Table 9.

Hierarchical Multiple Regression Analysis: Childhood Factors Predicting Early Adult Externalizing Behavior

	<i>B</i>	Std. β	Incremental R^2	Total R^2
Childhood Externalizing Behavior Composite	.444	.626***	.377	.377
Childhood ADHD Diagnosis	-2.528	-.127	.002	.379
Childhood Self-Concept	1.262	.082	.000	.379
Childhood Peer Rejection	-9.702	-.263*	.026	.405
Childhood Parent-Child Relationship Quality	.093	.008	.001	.406
ADHD x Self-Concept Interaction	.743	.127	.003	.409
ADHD x Peer Rejection Interaction	7.164	.124	.008	.417
ADHD x Parent-Child Relationship Interaction	.594	.038	.001	.418

* $p < .05$ *** $p < .0005$

Table 10.

Hierarchical Multiple Regression Analysis: Childhood Factors Predicting Early Adult Internalizing Behavior

	<i>B</i>	Std. β	Incremental R^2	Total R^2
Childhood Internalizing Behavior Composite	.497	.553***	.316	.316
Childhood ADHD Diagnosis	-8.095	-.370	.002	.318
WISC-III Full Scale IQ	.210	.278**	.043	.361
Childhood Self-Concept	-3.333	-.195	.022	.383
Childhood Peer Rejection	-7.331	-.181	.016	.399
Childhood Parent-Child Relationship Quality	1.143	.090	.001	.400
ADHD x Self-Concept Interaction	3.611	.562	.016	.416
ADHD x Peer Rejection Interaction	4.415	.069	.002	.418
ADHD x Parent-Child Relationship Interaction	-.656	-.038	.001	.419

** $p < .005$ *** $p < .0005$

Online Social-Networking Coding Manual

For use with Facebook.com & MySpace.com

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Last Revised: 5.1.2008

Last Update/Login

MySpace: The date of the target's last login can be found in the upper left corner of the page next to the target's profile picture.

Facebook: There is no explicit date of last update. The target's most recent activity may instead be obtained from the "Mini-Feed" feature the profile page. This can be done by clicking "Mini-Feed" and then "See All" stories. **The target's date of last activity is the most recent date in the "Mini-Feed" that the target has made an active addition/deletion/change to some aspect of his or her profile. (NOTE: A story that says "name and name are now friends" should not be used to ascertain the date of last activity.)** Be sure to compare this date of most recent activity to the date the page was printed in order to get an accurate time of the most recent activity.

If there are no stories available in the "Mini-Feed" function, note that the date of last activity cannot be obtained (N/A).

Most Recent Update:

- 1 N/A
- 2 More than one month ago
- 3 Within the last month
- 4 Within the last week
- 5 Today

Relationship Status

Status:

MySpace: Note the target's relationship status in the "Target's Details" section of the page.

Facebook: Note the target's relationship status at the top of the page.

- 0 There is no explicit indication of relationship status.
- 1 Not in a relationship
- 2 In a relationship

Legitimacy of Relationship:

Many times on Facebook two individuals will say they are in a relationship (“in an open relationship with”, “engaged to”, “married to”, or “it’s complicated with”) with an individual with whom they really are not. Use your best judgment to determine if the target is in a legitimate relationship and rate your confidence in that judgment by using the following criteria:

- 0 There is no explicit indication of relationship status.
- 1 **Not confident.** The target uses one of the above phrases to describe a relationship with a member of the *same sex*. Instead of this being a romantic relationship, the individuals are probably just friends. Any relationship labeled “it’s complicated with” should fall here. If the target lists a member of the same sex, see if there is any information at the top of the page about which gender the target is “interested in” to help inform your confidence (Facebook).
- 2 **Confident.** The target uses the phrase “in a relationship”, “in an open relationship”, “engaged”, or “married”, and either names or does not name the other person in the relationship. You can be confident in the legitimacy of the relationship if the target names a person of the opposite sex, but be more wary of same-sex relationships (see above). If the target says that he or she is single, mark confident.

Number of Friends

Number of Friends:

MySpace: Record the number of friends the target has.

Facebook: Record the number of friends the target has by selecting “My Friends” from the left-hand column and then Show: “All Friends”

About Me

Length:

Record the number of words the target has in his/her “About Me” section. You can get a word count by copying the target’s “About Me” section and pasting it into a Microsoft Word document. Highlight the section and run “Word Count” from the “Tools” menu to get the number. If you run the word count in Word, be sure to check that the text you are counting matches the text on the printed page, as it may have changed since it was

printed. Also, DO NOT count any text that is part of a poem, song, or stock phrase unless it is clear that the individual wrote it him/herself.

Coherence:

How well the target describes him/herself in a consistent and interconnected fashion.

- 0 The about me section is left blank (or does not appear on the page).
- 1 Descriptive thoughts about the target are presented in a disconnected or irrational fashion OR the target seems to be avoiding talking about him/herself in this section OR the information posted is a song/poem/phrase that they did not write.

Examples:

IM SELF MOTIVATED VERY AMBITIOUS AND EXTREMELY EXOTICALLY CHALLENGED. I DRIVE A LEXUS CAMRY BOXED CHEVY EDIE BAUER TENNIS EDITION, I ROLL ON 33 INCH DAYTONS!!! GHOST RIDE THE WHIP!! I LOVE LONG WALKS ON MEN'S BACKS. I HAVE A FETISH FOR CAN OPENNERS. MY KIDS ARE MY PARENTS. MY LITTLE ONE THINKS I'M A GENIUS. I OWN AN APARTMENT COMPLEX IN GREENWOOD NEXT TO THE HAMPTONS IN CENTRAL AMERICA. I'M FROM COMPTON, PUERTO RICO THE SOUTHSIDE. I HAVE THE NEW JORDANS. I'M LOOKN FOR FREE TICKETS TO ALL THE NBA GAMES!

this is me: carolina basketball, trying to learn to be a UGA football fan, DERAILING like it's my job, blue cups of woodchuck cider, pimp goblets, recapping stories from the night before with my friends, jaeger bombs, banana pudding, walking home barefoot at the end of the night, anything sweet, my rainbows, trivial pursuit pop culture, salads from moe's, sunny afternoons at he's not, my baller phone, my pumas, angry pirates from top o, diabetes appreciation, the feeling after i've had a great workout, green beans, limas, broccoli, watching days of our lives at the gym, diet coke, my bed, laughing with my friends, my computer, doing nothing, being ridiculous and making poor decisions, sunny days, reading mindless trash like people magazine and us weekly, watching any college basketball, going to players at the end of the night, spending my favorite weeks of the year at Camp Kudzu and Camp Sunshine, hating (aka being deathly afraid of) cats, saying OH SNAP and LOCK IT UP, missing my favorite tar heels more than ever!

This be ya girl Ericka. Way too fly for a nickname! What it is? What's up? What they do? Holla at ya girl. I'm on some real nigga shit! If you got a problem wit me, why the fuck ya on my page? Lol. But I'ma make it do what it do! I'm goin all way out bout mines. I'm in college, plus I'm successful in

the shit and passing wit my own damn brain!The girl got a lil job. I'm holdin it down.Gotta make cash!Money Is A Major Issue!I'll hoola though!Be easy!

- 2 There is some evidence of both rational and irrational comments. This type of description is often manifested as several short, incomplete sentences that skip around from topic to topic.

Example:

*heeeeyy! ~ sup yall the name's jackie ~ i LoVe sports and play volleyball ~ um i LOVE the mavs and DIRK NOWITZKI (and allll the rest of those fellas).. cant wait to go to college!... i really want to go to UT but right now its lookin like anywhere will do!! im basically siked for my senior year... 07!! now i get to hit up the clubs w/ my girl elyse, whoohooo!!! i love, love, love ChRiStMaS time && i love StArBuCks.. goin shoppin.. listenin to music.. anything chocolate.. sleeping.. wutev... im a purse slut (people call me bag lady and mary poppins) :] hmm i like to eat fruit. it makes me happy when its cool outside and i LoVe cold rain. i wash my hands frequently :) i like snow AnD the beach!~ i HATE being in fights w/ people. "when life gives you lemons, make lemonade!" =P nothing gets me in a better mood than a good workout. im ReAl organized...most of the time. i ♥ & miss my bro even though he lives like 2 min away! im pretty impatient and dont like to wait long for anything. late night showers = relaxing... i live in a t-shirt & shorts*** ~ "life's like an hour glass glued to the table"... live it up baby!! =P im out♥♥♥*

im a fun loving adventurous person i love to go to the races weither it be dirt track or drag racing it doesnt matter, i love to hang out with my friends im a true southern girl at heart and would rather spend my time in the country and not the city. im goign to school to be a nurse and its what ive always wanted so i cant wait to get it done with and start working

- 3 Clear sentences tell a descriptive story about the target and flow rationally from one idea to the next.

Example:

Let's see...My name is Jonathan, born and raised here in Delphi Indiana. I have lived on a farm all my life. I have blue eyes, blonde hair, and I am tall and slim. I'm outgoing, but some times a little shy around new people. I love meeting people and going out. I like to the gym every weekday to run, lift and swim. When I'm not at the gym I enjoy working outside or around the house/farm keeping busy. I enjoy riding my motorcyle, going to races, car racing, and just about any other racing. When I get the chance, I enjoy watching the playoffs in just about every sport but enjoy baseball games the most. As of September I am trying out for the Purdue Baseball team. Hope to get on and travel while meeting people and enjoying the

game I love. I am open minded individual, who will talk to anyone and hang out with everyone. The thing I hate most is fake people. Other than that if you wanna know anything else just ask.

Self-disclosure:

How much personal information the target shares about him/herself. This is information that makes you feel like you know the person better after hearing it.

- 0 The about me section is left blank (or does not appear on the page).
- 1 Little or no information that provides insight into the target's thoughts or feelings is revealed. Content is completely or almost completely devoid of emotion beyond simple likes and dislikes.

Examples:

well my name is allison...yea im a blonde and blue eyed babe...i like to go out and have a good time...i love to watch football...especially my team go hurricanes baby!!!! i love to hang out with my friends and just do whatever...i love laughing!!!if you wanna know more just ask me!!!

Im the worst kid since 85' ..Listen to my songs at www.myspace.com/domegetter then join I love mad dome gettaz on face book

- 2 There is some indication of emotional content. For example, the target may indicate some aspirations, hopes, or concerns. However, there are no comments that would be considered very unusual for an individual to share with a complete stranger.

Example:

I'm a pretty laid back kind of guy, Lifeguarding is my job and I love it, I love the kids and teaching them to swim. I can not figure out what to do with my hair which drives me crazy...short or long i dont know?! I like to scuba dive and im looking for a new dive partner. I like all kinds of music, jazz country rap rock and classical. I absolutely love to travel and am fortunate enough to have been to lots of different places. I really want to learn how to: windsurf, play the guitar, and speak a different language fluently. If I could do anything in the world right now it would be to go to filmschool, and become a big time movie director, because movies are my life. I dont really like tomatoes or corn, I love pizza.

Example:

Mallory is my name. Im twenty years old. I have the most amazing girlfriend ever. She is unlike anyone else Ive ever met and I love her very

much. Id say, Im a fairly decent person. I have flaws, but who doesnt?! But one things for sure, Im the most honest person youll ever meet. If you dont wanna know the truth, dont ask me. Sometimes I dont know if thats a good thing or not. Haha. But its just the way it is. Im more than happy with who I am, and it makes no difference to me what any of you think of me. I have a big heart, and I have a lot of love to give. Im 110% loyal to my lover, my friends, and my family. Ive been hurt, just like most people, but Ive realized that I cant drown myself in my sorrows and now I just try to take every day as it comes. You only live once, right? I dont let things get the best of me, lifes too short for petty bullshit and drama. And if I can help it, I rid my life of things that cause me any unnecessary headaches. I love to laugh and I love to smile. And Ive realized that its the little things that mean the most to me. Also, Ive recently started on a path to finding myself as a person. What really makes me happy....What I truly LIVE for and with every passing day I try to discover new ways to better myself. I like to be understood, and I try to be understanding as well. I have a deep passion for poetry, and writing. Emotions are so interesting to me. So I enjoy learning what makes people who they are. What gets under their skin, or what can brighten their day unlike anything else. And for a little useless info, I collect empty cologne/perfume bottles. Its cool. And I know you think so too :)

wha it do? my name is brent, but ppl call me bj.yea i kno right.my name is long as hell but we're not gonna get into that. uh..im 20..(one more year until im legal 2 drink!!) HEX YEA!! well ima college student at mississippi's best university. ha i think, well its msu. but i wont be here next year..ill be right down in the A doin my thang at morehouse. i use to be a football player but due to me doin stupid stuff during off season and tearin my acl,i just got a lil lazy..well hell a lot lazy and didnt wanna play anymore.but im thinkin bout playin again.(i love the game)i like to chill, party sometimes,go places,talk to guhs,and just be me. ima smart ass nigga 2.. mama didnt raise no fool. ya boy has a 4.0(on the 4.0 scale) and a 5.9 on the 6.0 scale. ima bout 2 reach my goal at have a 6.0..HEX YEA...i GIT ER DONE! ha its a south thang.at this time i do not have a guh..(yes notice i did say guh..and not girl..im country iight) and im not lookin 4 one(i dont think ha) but if miss right comes at my door then we're gonna GIT ER DONE!!!(ha ha yea boi!)so im just lookin 4 friends.ima cool ass dude so if u wanna kno more bout me HOLLA AT ME! by the way,i never pre-judge a person. i find that very stupid. just as if someone tells me bout wha a guh has done or some bull,i dont look at that. i look far pass that until i get to kno them and if they're like that then ill kno first hand.but i hate hate hate HATE he said she said shit. its stupid.i actually thought we grew up? but hey u cant take the kid out of the dumb and stupid right? ha but i guess that's it..anythin else just give me a holler and ill prob. answer any question u got..

- 3 Information is presented about the target that is not commonly shared with others. An individual may post personally revealing facts about him/herself or express strong emotions or opinions that do not seem socially acceptable for posting on a webpage for strangers to see.

Example:

im a very (emo)tional person. i like to cry my eyes out all fucking day. i am very sad, upset, and angry at the world. my favorite thing to talk about is heartbreak. in my spare time i like to sit under a tree and write about a girlfriend that dumped me in 4th grade.

Example:

Not much to say. My name is Edwin but every one calls me iggy. I am 6'0 and weigh about 180 pounds with a some what average build. I have dark brown hair which most of the time i either dye black or blue, and i have brown eyes. I listen to a lot of different types of music but most of the time you will hear me listening to metal (preferably bands like slayer and cradle of filth). Most of my free time is spent with my dog pongo. Yes i know its a stupid name but he's a dalmatian so i love the little iddiot. Curently I reside in Phoenix Arizona. I am a welder which is a bad thing if you know me and my perpensity to play with fire. I like to have fun alot wich often gets me into trouble. Things like playing mailbox baseball at three in the morning, Drinking and then throwing the bottles at random street signs, lawn shopping with friends when drunk (i think there is a pattern here). I enjoy going to concerts and tearing shit up in the pits. I have many scars on my body from ozzfests alone. My dream is to start a band and get somewhere, preffably on ozzfest. Music is my life. Nothing else matters at the time seeing as how i havent had a meeingfull reationship in about 5 years. I care for a lot of people and in the end i end up getting stabbed in the back for it. I'm sure one day i will find that someone but for now i aint even looking. Its not that it doesnt matter to me, its that ive been shit on so many times i just don't even care. I've said too much. I'm gonna go back to bed. God my head hurts.

Bragging:

How much of a concerted effort the target seems to be making to present him/herself in a favorable light.

- 0 The about me section is left blank (or does not appear on the page).
- 1 There is no indication that the individual is trying to make him/herself sound like a more desirable person to be associated with. Information seems to be presented in a balanced fashion and is probably an accurate portrayal of the individual.

Example:

I'm pretty laid back, I don't mind all the different kinds of people around me. I prefer to chill with close friends over going to parties, though that doesn't mean you shouldn't invite me! :P If you want to chat just IM me. I started learning about computers a little less than a year ago. At this point I'm learning Java and have a little real-world experience with Visual Basic dot net, but I know I have a long way to go before I can do what I'd like to- Eventually I want to be a network security analyst.

im a fun loving adventurous person i love to go to the races weither it be dirt track or drag racing it doesnt matter, i love to hang out with my friends im a true southern girl at heart and would rather spend my time in the country and not the city. im goign to school to be a nurse and its what ive always wanted so i cant wait to get it done with and start working

- 2 There is some reason to think that the target may be making an effort to present him/herself in a socially desirable light. There is a positive valence tied to some of what the target has written, but there are no explicitly grandiose statements that might indicate bragging or a desire to be thought of as socially desirable.

Example:

Well my name is Jerry and Im 18 and i do whatever i want..haha..I own 4 businesses - JI-International., Inc, JIJ Genetics, Monkey-Biz.com and Its-allthere.com. I went to Williamston High School and like football and track. I have some sweet friends and I like to hang out with a variety of people and personalities. I also Snowboard alot and its the shit. Im not sure where im going to college at Michigan State and LCC. I am also 6'5" and 224 lbs. and have an 8 pack. I think im a funny person and i believe i have a good personality and i like to write rap songs.HaHa.... JIJ 87

Mallory is my name. Im twenty years old. I have the most amazing girlfriend ever. She is unlike anyone else Ive ever met and I love her very much. Id say, Im a fairly decent person. I have flaws, but who doesnt?! But one things for sure, Im the most honest person youll ever meet. If you dont wanna know the truth, dont ask me. Sometimes I dont know if thats a good thing or not. Haha. But its just the way it is. Im more than happy with who I am, and it makes no difference to me what any of you think of me. I have a big heart, and I have a lot of love to give. Im 110% loyal to my lover, my friends, and my family. Ive been hurt, just like most people, but Ive

realized that I cant drown myself in my sorrows and now I just try to take every day as it comes. You only live once, right? I dont let things get the best of me, lifes too short for petty bullshit and drama. And if I can help it, I rid my life of things that cause me any unnecessary headaches. I love to laugh and I love to smile. And Ive realized that its the little things that mean the most to me. Also, Ive recently started on a path to finding myself as a person. What really makes me happy....What I truly LIVE for and with every passing day I try to discover new ways to better myself. I like to be understood, and I try to be understanding as well. I have a deep passion for poetry, and writing. Emotions are so interesting to me. So I enjoy learning what makes people who they are. What gets under their skin, or what can brighten their day unlike anything else. And for a little useless info, I collect empty cologne/perfume bottles. Its cool. And I know you think so too :)

Im the worst kid since 85' ..Listen to my songs at www.myspace.com/domegetter then join I love mad dome gettaz on face book

- 3 There are some explicit statements intended to make the individual sound more socially desirable. Such comments may include explicit boasting, expressions of extreme ability, likeability, etc., and may come off as naïve or somewhat more pathetic attempts to look desirable or cool.

Example:

I am a person that you would just want to gwt to know!! I love to talk to everyone and i am just about THE COOLEST person you will ever meet! I like to have fun, chill wit my BFF tara and my otha NC homies. Kevin Shabbott is cool. I also like to chill at partays, the movies, or chiles baby!! with my g's from school LIVE IT UP

well ima college student at mississippi's best university. ha i think, well its msu. but i wont be here next year..ill be right down in the A doin my thang at morehouse. i use to be a football player but due to me doin stupid stuff during off season and tearin my acl,i just got a lil lazy..well hell a lot lazy and didnt wanna play anymore.but im thinkin bout playin again.(i love the game)i like to chill, party sometimes,go places,talk to guhs,and just be me. ima smart ass nigga 2.. mama didnt raise no fool. ya boy has a 4.0(on the 4.0 scale) and a 5.9 on the 6.0 scale. ima bout 2 reach my goal at have a 6.0..HEX YEA...i GIT ER DONE!

Hostility:

Hostility aims to capture the degree to which the target expresses anger, aggression, or

extreme malcontent toward him/herself, toward others, or toward the world.

- 0 The about me section is left blank (or does not appear on the page).
- 1 There is no indication of overt hostility.
- 2 Score a 2 if (a) there is some brief mention of clear anger or hostility toward the world, but it does not dominate the majority of the about me section, OR (b) there is sort of a continuous, lower level criticism or annoyance expressed.

Examples:

Hey wuts up i'm Wayne one of the biggest freaks in middletown. The only thing you have to fear is ME. I love spending time with the one i love(KATIE)2/14/06!! I do believe in god a little bit, but i believe in SATAN more. FUCK politics and FUCK the world cause its all just gonna end some day

No offense anybody but there is no god, it does not exist, your wasting time and energy. You gotta be pretty insecure about life and yourself to feel like you need something to beleive in to prove your existance. well guess what people, nobody will ever know. quit hiding your insecurities with icing and candles, there is nothing more degrading then fooling yourselves.

This be ya girl Ericka.Way too fly for a nickname!What it is?What's up?What they do?Holla at ya girl.I'm on some real nigga shit!If you got a problem wit me, why the fuck ya on my page?Lol.But I'ma make it do what it do!I'm goin all way out bout mines.I'm in college, plus I'm successful in the shit and passing wit my own damn brain!The girl got a lil job. I'm holdin it down.Gotta make cash!Money Is A Major Issue!I'll hoola though!Be easy!

- 3 Score a 3 if (a) there is mention of anger or hostility that seems like it dominates the section or is in the majority of the sentences in the About Me section, OR (b) the person explicitly mentions even one threat of violence to the self or others.

Example:

como esta bitches! i live in the worst town you could ever imagine, not only is it boring here in gaychester, but it is consumed by overly judgemental pricks who have nothing better to do then spread rumors and gossip. I work for Mayo in st marys...i...am...a...HOUSEKEEPER. the lowest of the low. Nurses and Doctors are evil, they treat all the housekeepers like shit...

Friends' Comments

Number of Posts:

Record the number of total posts the target has received on his/her page. This will be the number of “wall posts” on Facebook and the number of “comments” on MySpace.

Connection:

The degree to which we can be certain that the people posting on the target’s wall/comments section have some sort of actual connection with the target, whether it be an in person relationship or an online relationship.

Past Meetings

Most comments that are classified as connection will involve talk about past or future meetings, indicating a meaningful in-person relationship. Any comment that references a specific time in the past that individuals last talked, saw each other, or did something with each other should be counted as connection. Comments such as “I haven’t seen you in forever”, then, would NOT count as connection, because we cannot be sure of the last time that these people actually did see each other, calling into question how meaningful their friendship really is.

Future Meetings

Similarly, comments that include talk of specific future meetings will often be counted as connection. For these types of comments you should expect to see some mention of when the individuals actually plan to talk, see each other, or otherwise get together to do something. It is NOT enough for someone to say “we should hang out soon”, or “see you soon!”. For connection that is based on future meetings, we want to feel confident that the individuals will actually follow through on their plans. This will sometimes require your own judgment, but by noting that individuals have designated a specific time to do something (ex. “I’ll call you later” or “see you tonight” would count) will help. Comments such as “call me tonight!” would not count as connection because we are less certain that the person will call them than if that person had instead said they would make the call.

Mutual Friends

Sometimes posts will make reference to mutual friends of the person posting and the person receiving the post. References to mutual friends count as connection because they emphasize a significant social relationship between the individuals.

Personal Information Shared Between Both People

Connection can also be indicated by posts that reveal information that is probably only known by the person posting and the individual they are posting to. These posts will frequently involve the poster asking the individual if they “remember” something from the past that they used to do or say. If you notice that the poster is talking about something that can be found on the person’s page, (for example, the poster is actually commenting on something that can be seen in the person’s profile photo), this should NOT count as connection.

Asking Questions

Also, simply asking questions about things is not automatically an indication of connection. If someone posts the question, “how’s school going?”, even though this poster knows something about the person (that they are in school), this information is too general and does not indicate that the friends regularly keep up with each other (knowing they are in school is probably also indicated on their page somewhere, too).

A question such as “how was the party last night?”, however, suggests that the poster is seeking to stay in touch with the individual and would count as connection. Look for questions that are specific and indicate that the poster is aiming to stay current with their relationship with that person.

NOTE: If it looks like there is a running conversation going on (looking at the times of the posts you see they are minutes apart), count all of these posts as 1 post, and look at the next number of posts equal to the total number you are counting as 1 (the number that make up the conversation).

Examples:

Past Meeting

Hey Kelly...i had a good time this weekend and i'm sure i'll be back there soon...also i'll let you know about whats goin on and state and you can come hang out for a night or two...talk to you later

HEY! it was good seeing you last night. it had been FOREVER!!!!

Future Meeting

ok so friday night my house. i'm cooking, bring a couple of bucks to help pay for ingredients lots of people, movies, friends, and all that jazz. if you wanna know more give me a call of message me <3 and saturday soho just so you know....

Mutual Friends

Let's get together soon with chris, sam, and andy.

Personal Information Shared Between Both People

I'm sorry cupcake! I thought it was a showwwwww, send it to me again and I promise I'll listen to it<3

Asking Questions

hey bro how did the exam go?

*** Range of People Posting – Connection*:**

Record the number of different individuals who have posted comments

that indicate connection.

Support:

Support aims to capture how the extent to which the messages posted on the target's wall are characterized by words of encouragement, compliments, understanding, caring, or validation. Record the number of supportive comments that appear on the page according to their level of support (i.e. low vs. high). Also record the total number of posts you are considering (i.e. 20, 5, etc.). Examples of each kind of support are below:

- Low Support – messages are mostly characterized by general compliments, which often includes compliments about a person's appearance or compliments about a person's page. Low support statements typically are not compliments about the target person's character; they are more superficial.
- Statements like "love ya" and "miss ya" are considered low support unless they are accompanied by higher support statements that appear more genuine and more commonly found in the context of a close relationship. By contrast, a statement such as "I love you" or "I miss you so much" is considered high support so long as it sounds sincere.
- When deciding whether a compliment or a validation is either low vs high support, low support statements are those that would seem more expected (and not out of place) in a casual friendship, high support statements are those that would seem more expected (and not out of place) in an intimate or close relationship. So, for example, it might seem appropriate for two people who are more than acquaintances, but simply casual friends, to say "miss ya" or "I'm giving you and your page some loove". However, only two people who were in a close and intimate relationship would probably say "I love you" or "I miss you so, so much."

Examples:

i'm in love with your eyelashes.

that picture is most glorious

hey sweetheart i'm fabulous how are you? i know it has been forever, you still look fantastic!

COngrats on getting a job! must be very exciting!

*you are toooo cute! we must hang out soon girl! a little bar hopping eh? mwah**

"yea girl, I'm lovin' the page, especially the background."

"Luv ya!"

"I hope that you enjoyed your break!"

"Soooo excited you're on facebook now! Can't wait to keep in better touch this way!"

- High Support messages offer encouragement, understanding, caring, or validation, in a deeper way than the Low Support messages do. High support messages are often compliments about the person's character or personality.
- High support messages are those that would seem appropriate to have been said in the context of a close, intimate friendship. We are not saying that high support statements have to come from a close friend (b/c we cannot objectively determine that), but when discriminating between high and low support, it again is helpful to ask yourself whether a particular post is something you would feel comfortable saying to any friend (low support), or whether it is a higher level of support that you would not intend for just anyone, but for someone particularly close to you.

Examples:

hey omg it was soooo good to see you today. thank you soo much for coming to the game and for the flower.

Thank your for opening up your apartment to such a fantastic party. I will have to extend such an invitation to a party at my place.

hey matt...just wanted to stop by before i logged of to tell you **THANKS** so much for talkin to me tonight and keeping me somewhat sane. your awesome matt. im really glad we've become such good friends. you rock!!! well anyway i'll talk to ya later. g'night and such. love ya. Byebye

"I miss you so, so much...come back soon, okay?"

"It's good to know I have sweet, sincere people out there, especially YOU"

"U are awesome, I can't wait to see you!"

I'll always be there for you because you're my best friend

i typically ignore most facebook requests, but how could i ignore you?

I miss you soooooo much, I can't imagine ever knowing all this stuff in all these books that i'm supposed to learn... day three of my labor day weekend and I am looking forward to class b/c it'll be a break from studying. **You are/were my inspiration.**

- NOT high or low support: Statements that seem like they would be appropriate to make to an acquaintance, someone you just met once briefly, or someone you had no

emotional relationship with. Statements such as “Happy New Years”, “Happy Birthday” etc. are NOT considered any type of support unless they are accompanied by other supportive statements intended specifically for the target person.

- Occasionally it is important to keep the larger principle in mind, that high support messages are most appropriate in the context of a close friendship/relationship, low support messages could be appropriate in the context of any friendship including a casual one, and messages not considered support would be appropriate for anybody, including an acquaintance or someone you just met. For example, “Thanks Erinn! I can’t wait to see u too! I get into Cville around 11:30 p.m. tues night or so, so we should def hang out at some point☺” would be considered low support not high because the statement “we should def hang out at some point” implies that the poster may not be isn’t as fully invested about wanting to see the target person as someone might be for a very close friend. However if at the end of the statement the poster had written “ I have to see you” or “I will see you tomorrow night,” we would consider that message a high support statement.
- Support versus Connection: A post can be considered one, the other, or both at the same time. Connection is about whether you think the poster and target have an actual relationship, particularly a relationship outside of the online realm. Support is about the quality of that relationship.

Connection, but not Support (High or Low): *ok so friday night my house. i'm cooking, bring a couple of bucks to help pay for ingredients lots of people, movies, friends, and all that jazz. if you wanna know more give me a call of message me <3 and saturday soho just so you know...*

(Low) Support, but not Connection: *awesome new picture, I love it!*

Both Connection and (High) Support: *i can't frickin wait to see you. chapel hill just isn't the same without you.*

- Sometimes Connection comments can be useful in determining whether a post is Support. For instance, in the example above “we should def hang out at some point”, you are using a comment about connection to also make an inference about how much the poster is telling the target that she truly wants to see her and misses her. But, Connection and Support are not the same thing.
- Many times it will probably be hard to find High Support posts that are not also examples of Connection, because it would presumably be difficult to make a High Support comment without having an actual relationship with that person. However, there should be more examples of Connection without High Support, or Low Support without Connection.

*** Range of People Posting – Support*:**

Record the number of different individuals who have posted comments that indicate low support, high support, and total support.

Relational Aggression:

Relational aggression is the number of messages posted on the target's page that directly or indirectly aim to belittle, criticize, insult, or coerce/manipulate the target. Also record the total number of posts you are considering (i.e. 20, 5, etc.).

Relational aggression may include indirectly derogating comments such as criticizing the target's page, insulting the target's character, or manipulating the target in a more extreme way. Manipulation may include inappropriate attempts to influence the target to do or not to do something. It may also involve talk of third persons, such as communications urging the target not to hang out with a particular person.

Examples:

So.... this is one of the gayest backgrounds ive ever seen! i just wanted to let you know im proud and you put a smile on my face.

and tell jamila ta stop dippin in our convo! dis kool aid too sweet 4 her SKINTY behind!!!

man you are a lesbian you cant even write me in the morning jerk!! you wrote christy yeah cool WHATEVER

So your page is boaring! lol Hey my sexy man thanks for always making fun of me. I thought that was your job for dannie.. whatever your gay anyways.. ;) but I luv Ya

Hey Lameo i was bored and just dropped by to tell ya i can't stand ya, but other than that have a nice day! lol

hey you hussie, you better call me soon

BITCH DID U RESPOND TO THA MESS IN UR INBOX?GET ON IT .

I emailed you the other day [at ianismybiatch@hotmail.com](mailto:ianismybiatch@hotmail.com) and it got sent back!

*** Range of People Posting – Relational Aggression*:**

Record the number of different individuals who have posted comments that indicate relational aggression.

Physical Threats:

Record the number of posts that contain physical threats toward the target or toward anyone else. Any posts recorded under “physical threats” should also be recorded under “relational aggression”. Physical threats include messages that communicate intent to hit, punch, kick, bite, slap, etc. someone. Remember, even if you think it is a joke, mention of physical harm must be recorded here.

Inappropriate Comments:

The target has comments posted on his/her page that might be embarrassing or judged inappropriate if viewed by a parent, teacher/professor, or employer.

- 0 There are no comments posted on the page.
- 1 There are no comments (0 posts) that might be deemed inappropriate or 1 or 2 occurrences of words such as “shit, ass, bitch, goddamn it, etc.”.
- 2 There are a few comments (1 or more posts) that might be considered inappropriate if viewed by an authority figure. Such comments may be characterized by profanity or vague and indirect references to alcohol. In terms of profanity, “fuck” will automatically score a 2. However, if there are 3 or more occurrences of words among all of the comments such as “shit, ass, bitch, goddamn it”, etc.), score a 2.

Examples:

*Hey Sweety, just came by to say hi. Hope ur having a fan-fuckin-tastic day!
Talk to ya later. ;]*

*Y DA FUCK DID YOU DELETED MII COMMENT...Eii your my 3rd
now...Happii ;)*

- 3 There is at least one comment on the page that directly references inappropriate uses of alcohol or drugs OR at least one comment making a reference to delinquency or sex.

Examples:

hey baby how u been i miss u soooo much i cant wait to see u cause when i see u we are going to have hot and wild sex!!! and i bet ur ass its gonna be all night and all day so get ready for me sexy cause im ready for ur thang lol alright sexy ill talk to u later aight muah love ya bye

*jst droppin bi 2 show a little luv!!
"slurp..suck..nibble..stroke..suck..caress..lick..nibble...slurp"
mmm...MySpace is def like sex crack!!!!*

*** Range of People Posting – Inappropriate Comments*:**

Record the number of different individuals who have posted comments that are inappropriate.

Photos

Facebook: first look only at the photos posted by the target, accessed by clicking the link “View Photos of _____” AND by looking at any Photo Albums they have posted. First, give your scores on the following codes based only on these pictures. THEN, you will give a second score for each code, scoring ALL of the photos on the page, including both those added by the target and those added by others labeled “Photos of _____” on the main photos page.

MySpace: click the “View Pics” link under their profile picture and score these photos.

Same-Age Peers:

The extent to which the pictures posted on the target’s page feature the target with other same-age peers.

- 0 There are no pictures posted on the page.
- 1 There are no pictures posted that include the target (e.g., all pictures of landscapes).
- 2 The target has some pictures posted on his/her page, but most of them contain only the target or the target and one other person (perhaps a romantic partner or best friend) who appears often. Pictures of the target with groups of other same-aged peers are relatively infrequent.
- 3 The majority of the pictures on the target’s page feature the target with a variety other same-aged peers or there are a number of photos showing the target in a group of same-aged peers.

Inappropriate Behavior - Photos:

This code aims to determine if there are pictures on the target’s page that show him/her engaging in behavior that might be considered embarrassing for a stranger to see or judged inappropriate if viewed by a parent, teacher/professor, or employer.

- 0 There are no pictures posted on the page.
- 1 Pictures do not contain the target engaging in inappropriate behavior. A few pictures of the target and/or friends just hanging out and drinking beer would not be considered inappropriate.
- 2 Some of the pictures posted show the target engaging in behaviors that might be considered inappropriate if viewed by a parent or authority figure. Examples of these kinds of pictures include the target or others chugging a beer or taking one or more shots of alcohol. The target will get a 2 even if there is only one picture like this. However, if the majority of the target's pictures are of people hanging out and holding/drinking beer, for example (typically a 1 behavior), we might expect an authority figure to be somewhat concerned about this, and we would score it a 2.
- 3 There is at least one picture that shows the target and/or others engaging in behavior that would clearly be labeled as inappropriate by a parent or authority figure. Such behaviors include (but are not limited to) vandalism, kegstands, playing beer pong, bonging beer, licking another person, throwing up, provocative dress (i.e. wearing only underwear or other extremely revealing clothing), or other generally outrageous or explicitly sexual actions.

ROMANTIC RELATIONSHIPS CODES

About Me: References to Romantic Partner

Positive References

How much the target comments positively on his/her boyfriend/girlfriend in the "about me," "general interests," or "who I'd like to meet" sections.

- N/A Target does not report being in a romantic relationship.
- 0 Target reports being in a relationship, but does not comment on boyfriend/girlfriend or relationship.
- 1 Target comments on relationship, but little or no positive information about the target's boyfriend/girlfriend specifically is revealed. Neutral or negative comments about the relationship or boyfriend/girlfriend fall into this category.

Example:

*iM BRiTNEY iM 17 YEARS OLD i WAS BORN JANUARY 26TH..RiGHT NOW iM JUST BASiCALLY FOCISiN ON SCHOOL STAYiN OUTTA TROUBLE N GETTiN SHiT DONE: Trustworthy. One of a kind. Loves being in long-term relationships. Extremely energetic. Unpredictable. Will exceed your expectations. Not a Fighter, but will knock your lights out.** *"If You Really Love Something Set It Free. If It Comes Back It's Yours, If Not It Wasn't Meant To Be" *"The hardest part of loving someone is knowing when to let go, and knowing when to say goodbye."*

- 2 There is some indication of positive feelings or associations towards the target's boyfriend/girlfriend. For example, the target may indicate that s/he feels proud of or supported by his/her boyfriend/girlfriend.

Example:

Sonoma Stater, going on for my third year as a psych major. Im very caring and give everything my all. Im into hanging with some close friends and enjoying everyones company. Im very active in my sorority and with a volunteer program on campus. I love to dance, though there are many who can shake it better than me, i still got some moves though ;o) Im a big movie fan, love going to the movies with friends and hunky boyfriend! Love the water- oceans, lakes you name it. I love reading and drinking coffee in the morning. My family is important to me and ill do anything for

- 3 The about me or interests section contains substantial positive feelings or information about the romantic partner and/or relationship

Example:

Well my name is Melanie. I am 20 years. My birthday is January, 7, 1987. I have a boyfriend named Paul. Me and him just moved in together. He is one of the few people that really understand me. Nothing much more to say. I guess I love butterflies, candy, diet pepsi, playing bingo, watching sex in the city, the nanny, mythbusters, and for paul's sake the steelers. I love sunny hot days, I don't like the rain too much. I love hot chocolate, cake, cookies, starbucks carmel frap., and animals, gum, And CLIFF BULLER has to be one of the greatest future brother in laws ever. He is truley the BEST. There are you Happy Cliff. etc. I pretty much have A.D.D. as you can tell but without really having it. I love being around my closest friends but I don't spend as much time with my friends as I wish I could.

Example:

- Who I'd like to meet:

My FuTuRe HuSbAnd...But I AlREady FouND Him...And Im WiTh Him And Love Him...So ID Like to MeET The FiNE Guy On PriSoN BReak, TYSoN The moDel And ChriS BRoWn....DtAs It For nOw

- 4 The positive description of the relationship or partner dominates the target's about me or general interests sections

*Example: "***+*dATs Y hE WaNnA rEAL bITcH lYKe mE!! *+*iF I wUs u I'd wAnt hIm tOo bItCh***+** kEEp DoIn Ya JoB aNd HatIn oN mE!! I LoVe It!! "*

Negative References to Romantic Partner

How much the target comments negatively on boyfriend/girlfriend or relationship in the "about me," "general interests," or "who I'd like to meet" sections.

- N/A Target does not report being in a romantic relationship.
- 0 Target reports being in a relationship, but does not comment on boyfriend/girlfriend or relationship.
- 1 Target comments on relationship, but little or no negative information about the target's boyfriend/girlfriend specifically is revealed (comments are exclusively neutral or positive).
- Example:*
Hello there, my name is Elizabeth! I'm very quiet but not at all SHY!! I am Irish, Scottish, and Welsh. I model for an agency in San Fran. Everyone thinks I'm a bitch when they first meet me but then come to find out I'm the total opposite when they get to know me! I go to a community college in Stockton. I hate annoying people!!! I still sleep with an orange baby bankie. :) I am very insecure.....! My favorite color is GREEN! My favorite thing to eat are burritos! I love to Drive, Hike, and I want to Bungee Jump someday. I would love to go to Ireland and Australia someday. I just moved in with my boyfriend! And I'm doing great.....
- 2 Some negative feelings or associations towards the target's boyfriend/girlfriend are expressed. For example, the target may indicate that s/he is embarrassed by or frustrated with his/her boyfriend/girlfriend.

Example:
I love to chat on the internet, talk on the phone. Play video games. Especially I love driving my truck. I have a sense of humor and a personality. I love to have fun and try new things. It doesnt matter what it is. I'm a romantic type of girl who likes guys to impress me. I love to drink too. I'm really sick and tired of guys playing with my mind and heart too. So if your going to do that don't bother asking to be my friend or anything.

- 3 The negative description of the relationship or partner dominates the target's

about me or general interests sections

Comments: Romantic Partner

Record the number of “wall posts” (Facebook) or “comments” (MySpace) the target has received from his/her boyfriend/girlfriend on his/her page.

Support-Romantic Partner:

Support aims to capture how the extent to which the messages posted on the target’s wall by his/her boyfriend/girlfriend are characterized by words of encouragement, compliments, understanding, caring, or validation. “I miss you” statements may be thought to mean that the person posting cares about the target, and will fall here. Record the number of supportive comments from the target’s boyfriend/girlfriend that appear on the page according to their level of support (i.e. low vs. high). Also record the total number of posts you are considering (i.e. 20, 5, etc.) from the target’s boyfriend/girlfriend. Examples of each kind of support are below:

- Low Support – messages are mostly characterized by general compliments.

Examples:

i'm in love with your eyelashes.

you are toooo cute! we must hang out soon girl!

- High Support – typically include messages offering encouragement, understanding, caring, or validation.

Examples:

hey omg it was so good to see you today. thank you soo much for coming to the game and for the flower.

hey matt...just wanted to stop by before i logged of to tell you THANKS so much for talkin to me tonight and keeping me somewhat sane. your awesome matt. im really glad we've become such good friends. you rock!!! well anyway i'll talk to ya later. g'night and such. love ya. Byebye

Relational Aggression-Romantic Partner:

Relational aggression is conceptualized as the degree to which the messages posted on the target’s page directly or indirectly aim to belittle, criticize, insult, or manipulate the target. Separately record the number of posts from the target’s boyfriend/girlfriend that indicate low and high relational aggression. Also record the total number of posts you are

considering (i.e. 20, 5, etc.) from the target's boyfriend/girlfriend. Examples of each kind of relational aggression are below:

- Low relational aggression - low level manipulation, or indirectly derogating comments, such as criticizing the target's page but not the target him/herself.

Examples:

So.... this is one of the gayest backgrounds ive ever seen! i just wanted to let you know im proud and you put a smile on my face.

and tell jamila ta stop dippin in our convo! dis kool aid too sweet 4 her SKINTY behind!!!

- High relational aggression – the post appears to be intended to insult the target's character or to manipulate the target in a more extreme way. Manipulation may include inappropriate attempts to influence the target to do or not to do something. It may also involve talk of third persons, such as communications urging the target not to hang out with a particular person, for example.

Examples:

hey you hussie, you better call me soon

BITCH DID U RESPOND TO THA MESS IN UR INBOX?GET ON IT.

I emailed you the other day at ianismybiatch@hotmail.com and it got sent back!

Inappropriate Comments-Romantic Partner:

The target has comments posted on his/her page from his/her boyfriend/girlfriend that might be embarrassing or judged inappropriate if viewed by a parent, teacher/professor, or employer.

- N/A The target does not report being in a relationship
- 0 There are no comments posted on the page.
- 1 There are no comments (0 posts) from the target's boyfriend/girlfriend that might be deemed inappropriate or 1 or 2 occurrences of words such as "shit, ass, bitch, goddamn it, etc."
- 2 There are a few comments (1 or more posts) from the target's boyfriend/girlfriend

that might be considered inappropriate if viewed by an authority figure. Such comments may be characterized by profanity or vague and indirect references to alcohol. In terms of profanity, “fuck” will automatically score a 2. However, if there are 3 or more occurrences of words among all of the partner’s comments such as “shit, ass, bitch, goddamn it”, etc.), score a 2.

Examples:

*Hey Sweety, just came by to say hi. Hope ur having a fan-fuckin-tastic day!
Talk to ya later. ;]*

*Y DA FUCK DID YOU DELETED MII COMMENT...Eii your my 3rd
now...Happii ;)*

- 3 There is at least one comment on the page from the target’s boyfriend/girlfriend that directly references inappropriate uses of alcohol or drugs OR at least one comment making a reference to delinquency or sex.

Examples:

hey baby how u been i miss u soooo much i cant wait to see u cause when i see u we are going to have hot and wild sex!!! and i bet ur ass its gonna be all night and all day so get ready for me sexy cause im ready for ur thang lol alright sexy ill talk to u later aight muah love ya bye

*jst droppin bi 2 show a little luv!!
"slurp...suck..nibble..stroke..suck..caress..lick..nibble...slurp"
mmm...MySpace is def like sex crack!!!!*

Photos: Romantic Partner

Romantic Partner - Photos:

The extent to which the pictures posted on the target’s page feature the target with his/her boyfriend/girlfriend OR only the boyfriend/girlfriend.

- N/A The target does not report being in a romantic relationship
- 0 There are no pictures posted on the page.
- 1 There are no pictures posted that include the target or his/her boyfriend/girlfriend (e.g., all pictures of landscapes).
- 2 The target has some pictures with people in them posted on his/her page, but they do not contain the boyfriend/girlfriend.
- 3 The target has some pictures of the boyfriend/girlfriend on his/her page.

- 4 The majority of the pictures on the target's page feature the target's boyfriend/girlfriend OR the target's profile picture is of both the target and his/her boyfriend/girlfriend.