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INDIVIDUAL ADJUSTMENT AS A PREDICTOR OF IMPROVEMENTS IN  
ROMANTIC RELATIONSHIP QUALITY FROM ADOLESCENCE TO  
ADULTHOOD

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A Dissertation

Presented to

the Faculty of Social Sciences

University of Denver

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In Partial Fulfillment

of the Requirements for the Degree

Doctor of Philosophy

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by

Jamie Novak Shoop, M.A.

August 2019

Advisor: Wyndol Furman, Ph.D.

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Author: Jamie Novak Shoop, M.A.

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Advisor: Wyndol Furman, Ph.D.

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### **Abstract**

Previous work suggests that individuals who experience a poor quality romantic relationship during adolescence are at heightened risk of experiencing poor quality romantic relationships in adulthood. However, this literature has not yet identified factors that may predict which individuals will go on to experience improved romantic relationship quality in adulthood, despite having experienced a poor quality romantic relationship during adolescence. The goal of the current study was to examine whether adolescents' psychosocial adjustment (internalizing and externalizing symptoms, substance use, and self-esteem) predicted improvements in the quality of their subsequent romantic relationships. Data were drawn from a community sample of 200 individuals first recruited during adolescence and followed for more than 10 years. Analyses were run on two subsamples of adolescents. The first subsample was made up of adolescents who reported experiencing a poor quality initial romantic relationship during adolescence per positive indicators of relationship quality (i.e., support and satisfaction) and the second on those adolescents whose initial romantic relationship was poor quality per negative indicators (i.e., negative interactions). Multilevel models indicated that externalizing symptoms, substance use, and self-esteem did not significantly predict improvements in adult romantic relationship quality. Internalizing symptoms at the time of participants' first romantic relationships significantly predicted later improvements in

relationship quality such that individuals in poor quality romantic relationships who had lower internalizing symptoms were more likely to experience improvements in relationship quality (i.e., relationship satisfaction and support) in adulthood compared to those with greater internalizing symptoms. Overall, adolescent romantic relationship quality was not significantly correlated with adult romantic relationship quality. Limitations and directions for future research are discussed.

## Table of Contents

Chapter One: Introduction .....	1
The Theoretical Significance of Adolescent Romantic Relationships .....	1
Empirical Links between Adolescent and Adult Relationship Quality .....	4
Individual Contributions to Relationship Quality.....	6
Individual Adjustment and Improvements in Relationship Quality .....	9
Assessing Romantic Relationship Quality.....	11
The Current Study.....	13
Chapter Two: Method .....	16
Participants.....	16
Procedure .....	17
Measures .....	19
Chapter Three: Results.....	25
Missing Data .....	25
Determination of At-Risk Subsamples .....	25
Descriptive Analyses .....	28
Multilevel Models.....	28
Positive Relationship Quality .....	29
Negative Relationship Quality.....	30
Sensitivity Analyses.....	30
Chapter Four: Discussion.....	36
Chapter Five: Summary .....	54
References.....	56
Appendix A.....	62

## **Chapter One: Introduction**

For many people, romantic relationships are a major cornerstone in their lives. By early adulthood, successfully establishing and maintaining a romantic relationship is considered a central developmental task (Roisman, Masten, Coatsworth, & Tellegen, 2004). Yet romantic experiences are common in earlier developmental stages, as well. By age 16, over half of adolescents report having had a special romantic partner in the past 18 months (Carver, Joyner, & Udry, 2003). By age 18, this number jumps to approximately 70% (Carver et al., 2003). Youth spend less time with parents and same-sex friends as they enter adolescence while increasing the time they spend with other-sex friends (Larson & Richards, 1991). By the end of the adolescence, romantic partners are rated as a higher source of support than either parents or peers (Furman & Buhrmester, 1992). When not together, adolescents report spending considerable time thinking about their romantic partners (Richard, Crowe, Larson, & Swarr, 1998). Not only do these relationships clearly occur during adolescence, they appear to play a significant role in adolescents' lives.

### **The Theoretical Significance of Adolescent Romantic Relationships**

Long written off as inconsequential “puppy love”, adolescent romantic relationships are now recognized as far from trivial (Collins, Welsh, & Furman, 2009). Indeed, substantial research has emerged exploring precursors, correlates, and outcomes associated with adolescent romantic experiences. Though romantic relationships are a

new frontier for adolescents, these relationships have theoretically and empirically been linked to other important dyadic relationships across the lifespan (see Furman & Rose, 2015).

For example, attachment theory posits that individuals form representations of close relationships, including romantic relationships, originally based on their early caregiving experiences (Bowlby, 1980). Consistent with this idea, empirical work demonstrates that adolescents' representations of their romantic relationships are associated with their earlier representations of friendships and parent-child relationships (Furman & Collibee, 2016). The quality of relationships across these developmental periods have also been directly linked. Using longitudinal data from the NICHD Study of Early Child Care and Youth Development, adolescent romantic relationship quality at age 15 was demonstrated to be higher among individuals who had experienced better quality maternal caregiving during infancy (Roisman, Booth-LaForce, Cauffman, Spieker, & The NICHD Early Child Care Research Network, 2009). Individuals with higher quality parent-child relationships in early adolescence also tend to have better romantic functioning during later adolescence (Crockett & Randall, 2006). Similarly, longitudinal work by Connolly, Furman, and Konarski (2000) linked the levels of both support and conflict in adolescents' friendships to the levels of support and conflict in their romantic relationships one year later ( $r = .38$  for support &  $r = .35$  for conflict,  $ps < .01$ ). These moderate correlations clearly establish an association between the qualities of different relationship types.

Just as adolescent romantic experiences build off of relationships occurring earlier in development, they are also thought to serve as precursors for relationship experiences



later in development, such as early adulthood. From a theoretical standpoint, behavioral systems theory (Furman & Wehner, 1997) suggests that as individuals progress across adolescence into early adulthood, romantic partners become the central figure in first the affiliative and sexual behavior systems and later the attachment and caregiver systems. In this way, experiences in adult romantic relationships are thought to build on the more affiliative romantic experiences occurring earlier in adolescence.

Empirical work lends support for these ideas, demonstrating a number of developmental changes in romantic relationships between adolescence and early adulthood. One significant change occurring in romantic relationships across this period is that they tend to increase in length. In a sample of German youth followed across ages 13 to 21, the mean duration of participants' romantic relationships increased from 3.9 months at age 13 to 5.1 months at age 15, 11.8 months at age 17, and 21.3 months by age 21 (Seiffge-Krenke, 2003). Analyses on the same sample as the current study have also demonstrated increases in average relationship length across adolescence into early adulthood (Lantagne & Furman, 2017). Additionally, romantic relationships are thought to become more emotionally intimate across this period. For example, Seiffge-Krenke (2003) found that support within romantic relationships tended to increase between ages 13 and 21. In an examination of the National Longitudinal Study of Adolescent Health data set, Meier and Allen (2009) similarly demonstrated that emotional intimacy increased from adolescence to early adulthood. Together, this theoretical work and empirical evidence suggests a process of romantic development across adolescence and early adulthood wherein the nature of romantic relationships progresses from shorter-

lived and affiliative to become increasingly interdependent and committed (Furman & Winkles, 2011).

In addition, much as the quality of dyadic relationships in childhood predicts the quality of romantic relationships during adolescence, emerging evidence suggests that the quality of adolescent romantic relationships directly predicts the quality of romantic relationships occurring in early adulthood. Although the literature linking adolescent and adult romantic quality is substantially more limited than the literature linking the quality of dyadic relationships in childhood and adolescence (Karney, Beckett, Collins, & Shaw, 2007), similarities in adolescent and adult romantic relationship quality are predicted by both attachment and behavioral systems theories.

### **Empirical Links between Adolescent and Adult Relationship Quality**

Madsen and Collins (2011) present one of the few studies directly linking adolescent romantic relationship quality to the quality of romantic relationships in early adulthood. Using an at-risk sample from the Minnesota Longitudinal Study of Parents and Children, Madsen and Collins (2011) coded adolescents at age 16 talking about a past or current romantic relationships lasting at least two weeks. Conflict resolution, disclosure, enjoyment, intimacy, and security were combined to create a single “adolescent dating quality” variable. In early adulthood at age 20 or 21, participants and their romantic partners of four months or longer were observed interacting. These interactions were coded for “romantic relationship process”, consisting of balancing partner/subject needs, conflict resolution, overall quality, secure base behavior, shared positive affect, and “romantic relationship negative affect”, consisting of anger, dyadic negative affect, and hostility (Madsen & Collins, 2011).

In addition, Madsen and Collins (2011) examined and controlled for the influence of participants' early experiences with parents and peers, including supportive care during infancy, peer competence in early childhood, and parent-child process during early adolescence. Analyses indicated that adolescent dating quality significantly predicted young adult romantic relationship quality, as measured by romantic relationship process, above and beyond the influence of earlier experiences with peers and parents. Together, experiences with peers, parents, and adolescent romantic partners explained 30% of the variance in adult romantic relationship process, with adolescent dating involvement and adolescent relationship quality uniquely accounting for 19% of the total variance. This result is noteworthy in establishing the association between the quality of adolescent romantic relationships and the quality of later romantic relationships in adulthood. In addition, the findings of Madsen and Collins (2011) are noteworthy because, having controlled for earlier peer and parenting influences, they suggest that the influence of adolescent romantic relationships is not simply an iteration of earlier peer or parenting effects. Rather, adolescent romantic relationships make a unique contribution to adult romantic relationship quality.

The implications of these findings are significant. Adolescents who have higher quality romantic relationships during adolescence are likely to have higher quality romantic relationships in young adulthood, as well. In turn, adolescents with poorer quality romantic relationships are at risk for having poorer quality romantic relationships in young adulthood. Longstanding efforts to support healthy relationship functioning in adulthood, then, may be best served by identifying and supporting those individuals who

are at heightened risk for poor adult romantic outcomes based on their involvement in poorer quality romantic relationships in adolescence (Karney et al., 2007).

Notably, Madsen and Collins (2011) did not explore other factors impacting the association between adolescent and adult romantic relationship quality. That is, they did not explore variables which may have predicted why some participants' adolescent relationship quality *did not* predict their adult relationship quality, ultimately leaving unanswered questions about whether and how some adolescents who experience poor quality romantic relationships may go on to experience high quality adult romantic relationships. Indeed, relationship researchers have long emphasized the need to study factors that contribute to individual variation in patterns of typical romantic development (Collins, 2003). From a prevention and intervention standpoint, it may be especially important to identify factors that predict which individuals who are at-risk based on their adolescent romantic relationships do go on to experience poor quality romantic relationships and which individuals go on to experience healthy adult relationships (Karney et al., 2007). Doing so would enable prevention and intervention work to better identify adolescents at-risk for poor quality adult outcomes as well as provide preliminary information about which variables to target in intervention work.

### **Individual Contributions to Relationship Quality**

Robins, Caspi, and Moffitt (2002) argue that relationship quality is the result of a dynamic interplay between stable individual differences and the relationship environment. Within this framework, each individual's romantic relationship quality, both within their adolescent and adult romantic relationships, is at least partially influenced by stable individual differences. These individual differences may be the key

to differentiating between at-risk adolescents who will in fact continue to have poor quality romantic relationships in adulthood and those who will experience improvements in relationship quality.

Robins and colleagues (2002) explored the contributions of individuals' personality to their romantic relationship experiences over time. Using data from the Dunedin Multidisciplinary Health and Development Study, Robins and colleagues (2002) assessed three indicators of participant personality at age 18: negative emotionality, positive emotionality, and constraint. Relationship quality, conflict, and abuse were assessed via participant self-report at age 21 and 26. Consistent with work by Madsen and Collins (2011), results indicated that relationship quality is moderately stable across time ( $r = .18$  to  $.48$ ,  $ps < .01$ ). However, findings also suggested that personality is more stable than relationship quality ( $r = .53$  to  $.64$ ,  $ps < .01$ ) and in fact predicted changes in relationship experiences over time. Adolescents prone to negative emotionality experienced declines in relationship quality and increases in conflict whereas adolescents higher in positive emotionality and constraint experienced improvements in relationship quality (Robins, et al., 2002). These findings are consistent with other work demonstrating that adolescents with greater negative emotionality had poorer relationship quality in early adulthood (Donnellan, Larsen-Rife, & Conger, 2005). Together, this body of work suggests that stable individual differences can predict changes in romantic relationship experiences across time.

Individuals' psychosocial adjustment, including their internalizing and externalizing symptoms, self-esteem, and substance use patterns, may represent stable individual differences which also could predict changes in relationship experiences across

time. In fact, research has demonstrated the stability of these indicators of psychosocial adjustment across adolescence and into early adulthood. For example, Johnson and Galambos (2014) examined internalizing symptoms and self-esteem during adolescence (ages 12 to 19) and emerging adulthood (ages 18 to 25). Both internalizing symptoms and self-esteem demonstrated moderate stability across these ages ( $r_s = .29$  &  $.31$ , respectively,  $ps < .05$ ); Johnson & Galambos, 2014). Other work has shown self-esteem to be highly stable across the lifespan, with correlations ranging from  $.50$  to  $.70$  ( $ps < .05$ ; Trzesniewski, Donnellan, & Robins, 2003). Similarly, Hicks and colleagues (2007) measured externalizing behavior and substance at age 17 and again at age 24. Externalizing behaviors demonstrated significant rank order stability across these time periods ( $r = .44$  for men &  $.40$  for women,  $ps < .01$ ) as did substance use ( $r = .38$  to  $.49$  for men &  $.30$  to  $.56$  for women,  $ps < .01$ ; Hicks et al., 2007).

These adjustment variables are also associated with the stable personality traits explored by Robins and colleagues (2002), further supporting the idea that psychosocial adjustment may be a stable individual difference. For example, higher substance use as well as greater internalizing and externalizing symptoms are associated with greater negative emotionality and lower constraint in adolescence (Chassin, Flora, & King, 2004, Hankin et al., 2007; Tackett et al., 2013). Similarly, lower self-esteem is strongly associated with greater negative emotionality across the lifespan (Hankin et al., 2007; Neiss, Stevenson, Legrand, Iacono, & Sedikides, 2009).

Further, research has demonstrated longitudinal associations between adolescents' psychosocial adjustment and their romantic relationship quality in adulthood. For example, one particularly well-documented effect is that adolescents with fewer

internalizing symptoms go on to experience improved romantic relationship quality into adulthood (Johnson & Galambos, 2014; O'Connor et al., 2017; Vujeva & Furman, 2011). In one longitudinal study, relationship conflict increased more sharply and positive problem solving developed more slowly for individuals with higher depressive symptoms compared to adolescents with lower symptoms (Vujeva & Furman, 2011). Using data from the National Longitudinal Study of Adolescent Health, Johnson and Galambos (2014) demonstrated significant associations between depressive symptoms in adolescence and early adulthood and found that individuals with higher depressive symptoms had poorer quality romantic relationships in adulthood.

Similar patterns have been found for other aspects of psychosocial adjustment. Specifically, adolescents with higher self-esteem go on to experience better relationship quality in early adulthood (Johnson & Galambos, 2014; Joyner & Campa, 2006; Orth, Robins, & Widaman, 2012). Likewise, evidence from the Rochester Youth Development Study suggests that higher externalizing symptoms and greater substance use during adolescence impacts later romantic relationship experiences, including the likelihood of cohabitation (Thornberry, Krohn, Augustyn, Buchanan, & Greenman, 2016). Indeed, higher rates of such adjustment difficulties earlier in life have been shown to impact later rates of romantic relationship satisfaction and conflict (Raudino, Woodward, Fergusson, & Horwood, 2012). Concurrent associations between psychosocial adjustment and romantic relationship quality have also been demonstrated in both adolescence and adulthood (Collibee & Furman, 2016; Padilla-Walker, Memmott-Elison, & Nelson, 2017).

## **Individual Adjustment and Improvements in Relationship Quality**

From a theoretical standpoint, why would we expect that individuals with better psychosocial adjustment would experience improvements in relationship quality whereas individuals with worse psychosocial adjustment would not? Several processes may be at play. First, some researchers have argued that adolescent romances provide a direct opportunity to learn and refine skills necessary for successful relationships, such as the ability to cope with negative emotions within relationships (Shulman, Davila, & Shachar-Shapira, 2011). Consistent with this idea, the majority of adolescents and young adults report having learned a number of relationship skills in their previous relationships (Norona, Roberson, & Welsh, 2017). Individuals with better psychosocial adjustment may simply be in a better position to learn from their negative romantic experiences, whereas those with poorer psychosocial adjustment may be less likely to learn from their prior experiences. Alternatively, adolescents with poorer psychosocial adjustment may in fact learn new relationship skills but struggle to implement them in future relationships due to deficits in emotion regulation or other difficulties underlying poor adjustment.

Another possibility is that psychosocial adjustment more strongly predicts adult relationship quality than does the quality of earlier romantic relationships. Support for this idea comes from developmental task theory, which considers romantic relationships an emerging developmental task during adolescence and a salient developmental task during early adulthood (Roisman et al., 2004). According to developmental task theory, the quality of functioning within emerging developmental tasks may not show long-term predictive stability because functioning in emerging developmental tasks is likely to be variable and unstable (Roisman, et al., 2004). Given that romantic relationships are an



emerging developmental task during adolescence, the quality of these relationships may be less constant. Even among research linking adolescent and adult romantic relationship quality, the correlation between quality at these two time points is far from perfect (Madsen & Collins, 2011; Robins et al., 2002), suggesting at least some degree of variability in relationship quality. To the extent that overall psychosocial adjustment is more stable, adjustment may actually be a better predictor of romantic outcomes (Roisman et al., 2004).

### **Assessing Romantic Relationship Quality**

Collins (2003) proposed five features which could be used to describe romantic relationships and their significance: involvement, partner selection, relationship content, cognitive and emotional processes, and, finally, romantic relationship quality. Quality reflects the “degree to which the relationship provides generally beneficent experiences” and is indicated by varying levels of intimacy and conflict (Collins, 2003, p. 10).

Although the importance of accounting for relationship quality when considering the impact of adolescents’ romantic relationships may seem obvious, research has traditionally tended to focus on other features of romantic relationships, particularly romantic involvement or a person’s number of romantic partners.

More recent empirical work has demonstrated the importance of examining relationship quality. For example, research examining romantic involvement in adolescence demonstrates that greater involvement is associated with poorer individual adjustment, including higher rates of externalizing behavior (Joyner & Udry, 2000) and internalizing symptoms (Starr, Davila, Stroud, Li, Yoneda, Hershenberg, & Miller, 2012). However, research using the same data set as the current study has demonstrated that

higher quality romantic relationships in adolescence are actually associated with lesser concurrent rates of externalizing behavior and internalizing symptoms whereas lower quality romantic relationships are associated with greater concurrent rates of these symptoms (Collibee & Furman, 2015). This research highlights the importance of examining the quality of adolescents' romantic relationships as opposed to mere involvement.

Studies have used a range of relationship features to indicate romantic relationship quality, including measures of relationship support, conflict, or relationship satisfaction. Consistent with ideas put forth by Collins (2003), higher quality relationships likely provide higher levels of support and satisfaction and lower levels of conflict or negative interactions. Better relationships are likely to be ones in which individuals can rely on their partners for emotional support and provide similar support in turn. Similarly, better relationships likely feature less frequent conflict overall and certainly conflict of a less severe degree. Finally, relationship satisfaction is likely to be higher in those relationships which provide more beneficial experiences overall.

In contrast, poorer quality romantic relationships may be ones in which individuals are less likely to turn to their partners for emotional support, or be less likely to themselves provide that support to their partners. These relationships may feature less open communication or less comfort with emotional intimacy. Poorer quality relationships may also tend to have more frequent conflict, poorer ability to resolve reoccurring conflict, or more severe types of conflict (e.g., physical conflict). Relationship satisfaction may be lower in these types of romantic relationships.

Despite calls to utilize multidimensional approaches in the study of relationship quality, past research has often relied on a single, often self-reported, indicator of romantic relationship quality (Padilla-Walker, Memmott-Elison, & Nelson, 2017). One notable exception is work by Madsen and Collins (2011) which used coder-rated interview data in adolescence and coder-rated observational data in adulthood to indicate multiple dimensions of romantic relationship quality, including conflict resolution, intimacy, disclosure, and hostility. Similar approaches in which multiple indicators, ideally assessed via multiple reporters, offer a more thorough investigation of romantic relationship quality.

### **The Current Study**

In sum, the state of the literature on romantic development suggests both theoretical and empirical links between adolescent and adult romantic relationships. Findings by Madsen and Collins (2011) strongly suggest that individuals with poor quality romantic relationships during adolescence are at heightened risk for poor quality relationships in adulthood. However, given that relationship quality in adolescence is not perfectly correlated with relationship quality in adulthood, some adolescents, despite their initial risk, will go on to experience improvements in relationship quality. Stable individual differences, such as individuals' psychosocial adjustment, may offer improved ability to differentiate between those adolescents who will continue to experience poor quality relationships in adulthood and those who will experience improved relationship quality (Robins et al., 2002). However, the contributions of psychosocial adjustment to later relationship quality have not yet been explored among a sample of adolescents who are at heightened risk for poor relationship quality in adulthood.

The current study addresses this gap in the literature by identifying a sample considered to be at high risk for poor quality romantic relationships during adulthood due to their experience of a low quality romantic relationship during adolescence. Within this sample, the current study explores whether psychosocial adjustment during adolescence is associated with subsequent improvements in romantic relationship quality. In particular, four markers of psychosocial adjustment and well-being are examined: internalizing symptoms, externalizing behavior, substance use, and self-esteem. Romantic relationship quality is assessed via three indicators commonly used in studies of relationship quality: relationship support, negative interactions (i.e., conflict), and relationship satisfaction. These qualities are assessed using both self-report and interview data in order to provide a comprehensive assessment of relationship quality.

The current study broadly predicts that better psychosocial adjustment at the time of participants' first relationships will predict improvements in relationship quality from adolescence to adulthood. Specifically:

- 1) Lower internalizing symptoms at the time of participants' first romantic relationships will predict improvements in adult romantic relationship quality, as measured by changes in relationship support, negative interactions, and relationship satisfaction.
- 2) Lower externalizing symptoms at the time of participants' first romantic relationships will predict improvements in adult romantic relationship quality, as measured by changes in relationship support, negative interactions, and relationship satisfaction.

- 3) Lower substance use at the time of participants' first romantic relationships will predict improvements in adult romantic relationship quality, as measured by changes in relationship support, negative interactions, and relationship satisfaction.
- 4) Higher self-esteem at the time of participants' first romantic relationships will predict improvements in adult romantic relationship quality, as measured by relationship support, negative interactions, and relationship satisfaction.

## **Chapter Two: Method**

### **Method**

#### **Participants**

The current study was part of larger study of close relationships and psychosocial adjustment in adolescence and early adulthood. The participants were made up of 100 males and 100 females recruited when they were in the tenth grade ( $M$  age = 15 years, 10.44 months old,  $SD = .49$ , range 14-16 years old). Data were drawn from the first eight waves of the study (10<sup>th</sup>, 11<sup>th</sup>, and 12<sup>th</sup> grade, as well as 1, 2.5, 4, 5.5, and 7 years post-high school. The current study's specific hypotheses were tested using an at-risk subsample of participants who were at heightened risk for poor quality adult relationships due to having had a low quality romantic relationship during adolescence (see Determination of Risk Subsamples below).

In an effort to recruit a diverse sample, brochures and letters were distributed to families residing in a number of different zip codes and to students enrolled in a range of schools in ethnically diverse, working class to upper middle class neighborhoods in a large Western metropolitan area. The ascertainment rate was unable to be determined due to the use of brochures, and because many letters were mailed to families who did not have a 10<sup>th</sup> grade student in the home.

Interested families were contacted with the goal of selecting a quota sample with an equal number of males and females and a distribution of racial/ethnic groups that

approximated that of the United States at the time of recruitment. Families were paid \$25 to hear a description of the project in their home in order to promote maximal response. Of these families that heard the study description, 85.5% opted to participate in the Wave 1 assessment. Participants were selected to represent the ethnic distribution of the United States at the time of recruitment. The sample consisted of 11.5% African Americans, 12.5% Hispanics, 1.5% Native Americans, 1% Asian American, 4% biracial, and 69.5% White, non-Hispanics. The sample was of average intelligence (WISC-III vocabulary score  $M = 9.8$ ,  $SD = 2.44$ ); 55.4% of their mothers had a college degree, indicating that the sample was predominately middle or upper middle class. With regard to sexual orientation, 90.7% said they were heterosexual/straight at Wave 8, whereas the others said they were bisexual, gay, lesbian, or questioning. We retained the sexual minorities in the sample to be inclusive.

Our sample's scores were compared to comparable national norms of representative samples for trait anxiety scores on the State Trait Anxiety Inventory (Spielberger, 1983), maternal report of externalizing symptoms on the Child Behavior Child Checklist (Achenbach, 1991), participants' reports of internalizing and externalizing symptoms on the Youth Self Report, and 8 indices of substance use from the Monitoring the Future survey (Johnston, O'Malley, & Bachman, 2002). The present sample was more likely to have tried marijuana, 54% vs. 40%,  $z = 2.23$ ,  $p < .05$ ; sample scores did not differ significantly from the national scores on other measures, including frequency of marijuana usage.

## Procedure

Participants completed questionnaires at home at their convenience and then took part in a series of sessions in which they were interviewed about their romantic relationships in the laboratory. Questionnaires about the participant's psychosocial adjustment and risky/problem behaviors were also completed by the mother and a close friend nominated by the participant (*M* Mothers *N*= 169; *M* Friend *N*= 145). The questionnaires used in the current analyses were each administered at every wave of data collection.

For the purposes of the current study, data were drawn from the first eight waves of the study, beginning when participants were in the 10<sup>th</sup> grade and ending approximately 7 years post-high school. Data were collected on a yearly basis during Waves 1 through 4 and every eighteen months during Waves 5 through 8. Participant retention was excellent (Wave 1 & 2: *N* = 200; Wave 3: *N* = 199, Wave 4: *N* = 195, Wave 5: *N* = 186, Wave 6: *N* = 185, Wave 7: *N* = 179, Wave 8: *N* = 172). Those who participated in the study in Wave 8 did not differ from those who did not in terms of age, ethnicity, gender, maternal education, or their initial scores on the primary variables.

Participants completed all self-report measures about their most important romantic relationship in the last year that had lasted at least a month. Across all waves, an average of 68.44% of participants reported having a romantic partner in the previous year (Wave 1 *N* = 59.50%, Wave 2 *N* = 64.50%, Wave 3 *N* = 74.50%, Wave 4 *N* = 71%, Wave 5 *N* = 68.50%, Wave 6 *N* = 71.50%, Wave 7 *N* = 68.50%, Wave 8 *N* = 69.50%). The



average participant reported on 3.9 romantic partners over the course of the study ( $SD=1.66$ , Range 1 to 8).

The study was approved by the local Institutional Review Board. The confidentiality of participants' data was protected by a Certificate of Confidentiality issued by the U.S. Department of Health and Human Services.

## **Measures**

**Internalizing Symptoms.** Internalizing symptoms were measured using a composite derived from the trait scale of Spielberger's (1983) State-Trait Anxiety Inventory (STAI;  $M \alpha = .92$ ), the Beck Depression Inventory (BDI; Beck, Rush, Shaw, & Emery, 1979;  $M \alpha = .86$ ), and the Youth/Adult Self Report (Achenbach 1991/1997). Participants completed Achenbach's Youth Self-Report in Waves 1-3 and Achenbach's Adult Self-Report in Waves 4-8. Internalizing scores were derived from the 26 items that were comparable on the two versions ( $M \alpha = .82$ ). None of the items explicitly asked about behavior in romantic relationships.

**Externalizing Symptoms.** Externalizing symptoms were measured using a composite derived from participant, mother, and friend report. Participants completed Achenbach's Youth Self-Report in Waves 1-3 and Achenbach's Adult Self-Report in Waves 4-8 (Achenbach 1991/1997). Externalizing scores were derived from the 20 items that were comparable on the two versions ( $M \alpha = .87$ ). None of the items explicitly referred to behavior in romantic relationships.

Friends and mothers reported on the participant's externalizing symptoms by completing the externalizing items of the Child Behavior Checklist in Waves 1-3, and the

externalizing items on the Adult Behavior Checklist in Waves 4-8 (Achenbach, 1991/1997). Friend and mother reports of externalizing scores were derived from the 19 items that were comparable on the two versions ( $M \alpha = .84$  &  $.88$ , respectively).

**Substance Use.** Substance use was assessed using a composite derived from participant and friend report. Participants completed the Drug Involvement Scale for Adolescence (Eggert, Herting, & Thompson, 1996). This measure assesses the participant's use of beer, wine, liquor, marijuana, and other drugs (cocaine, opiate, depressants, tranquilizers, hallucinogens, inhalants, stimulants, over-the-counter drugs, & club drugs) over the last 30 days. Frequency of each substance use was scored on a 7-point scale ranging from never to every day. Participants also completed a 9 item measure assessing adverse consequences arising from substance use ( $M \alpha = .92$ ) and a 16 item measure assessing difficulties in controlling substance use ( $M \alpha = .90$ ). The questionnaires on substance use were administered by computer-assisted, self-interviewing techniques to increase the candor of responses.

Friends were asked four questions about the participant's use of alcohol and drugs and problems related to the use of those substances as part of their version of the Adolescent Self-Perception Profile (Harter, 1988). The four items were averaged to derive the friend report of the participant's substance use and problems ( $M \alpha = .82$ ).

**Self-Worth.** Global self-worth was measured using a composite derived from participant, mother, and friend report. Participants completed an abbreviated version of Harter's (1988) Self-Perception Profile for Adolescents (SPPA) at Waves 1-3 and an abbreviated version of Messer and Harter's (1986) Adult Self-Perception Profile at

Waves 4-8. Participants, friends and mothers rated the participant's global self-worth using an abbreviated form of Messer and Harter's (1986) scale on the Adult Self-Perception Profile. The scale consisted of five items using a 4-point structured alternative format ( $M \alpha = .85$ ), (participant-mother  $M r = .47$ ; participant-friend  $M r = .38$ ; friend-mother  $M r = .28$ , all  $ps < .02$ .)

**Negative Interactions and Support.** Participants completed the Network of Relationships Inventory: Behavioral Systems Version (NRI; Furman & Buhrmester, 2009), to assess their perceptions of their most important romantic relationship in the last year. The short version of the NRI includes five items on social support ( $M \alpha = .89$ ) and six items on negative interactions ( $M \alpha = .93$ ). Participants used a 5-point scale to rate how much each description was characteristic of their romantic relationship.

**Relationship Satisfaction.** Relationship satisfaction was assessed through an adapted version of the Quality of Marriage Index (QMI; Norton, 1983), a 6-item self-report measure that assesses an individual's global perception of his or her most important relationship quality (Baxter & Bullis, 1986). An example of a question is "My relationship with my boy/girlfriend makes me happy" which the participant then responds to on a 7 point Likert scale (1= strongly disagree/not at all true to 7 = strongly agree/very true;  $M \alpha = .96$ ).

**Derivation of composites.** The derivation of composites involved several steps. The various measures used to create the composites had different numbers of points on their scales. Such differences among measures present problems in deriving composite measures, as the scores from the different measures in the composite are not comparable.

Therefore, we first standardized scores on each measure *across* all waves to render the scales comparable with one another. In other words, all the data across the seven waves were compiled for each measure, and one set of standardized scores for all waves of each measure was derived. For example, we aggregated the eight waves of data on the Beck Depression Inventory, determined the overall mean and standard deviation, and calculated a single set of standardized scores for all waves.

This procedure of standardizing variables over waves is recommended as it retains differences in means and variance across age, and neither changes the shape of the distribution, nor changes the patterns of associations among the variables (Little, 2013).

After each measure was standardized across waves we generated several composites. First, BDI depression scores, STAI anxiety scores, and Achenbach internalizing symptom scores were averaged to derive a composite index of internalizing symptoms. Second, participants', friends', and mothers' reports of externalizing symptoms were averaged to derive a composite index of externalizing symptoms. With regard to substance use we averaged the participants' reports of beer or wine drinking and their reports of drinking liquor to obtain a measure of alcohol use. Similarly, we averaged the participants' reports of marijuana use, and their reports of other drug use to derive a measure of drug use. Participants' reports of intra- and interpersonal problems, control problems and adverse consequences of use were each averaged to derive a measure of problem usage. Finally, participants' alcohol, drug, and problem usage, and friends' reports of substance use were averaged to derive a composite measure of substance use.

**Romantic Interview.** The Romantic Interview (RI; Furman, 2001) was used to assess participants' interactions within romantic relationships. The RI was based on the Adult Attachment Interview (AAI; George, Kaplan, & Main, 1985/1996). Many questions were the same or similar to those of the AAI. For example, participants were asked to describe their romantic relationships using specific memories to support descriptions. They were asked about separation, rejection, threatening behaviors, and being upset.

Participants were interviewed about one to three romantic relationships. For the present study, only information regarding the most important relationship in the past year was used. The RIs were transcribed verbatim. Crowell and Owen's (1996) Current Relationship Inventory (CRI) coding system was used to rate relationship qualities including participants' support seeking and providing, satisfaction with their relationship, and conflict. All coders attended Main and Hesse's AAI Workshop and received additional training in coding the Romantic Interviews. Reliabilities of the relationship qualities composites were satisfactory ( $M$  intraclass correlation coefficient (ICC) = .72).

**Satisfaction.** Coders rated the participant's overall expressed satisfaction with their romantic partner and relationship. Satisfaction scores were coded based on participants' comments about their feelings about their partner and the relationship at the time of the relationship.

**Support.** Coders separately rated support seeking and providing by the participant. Support seeking refers to expressing distress, accepting comfort, and using the other as a secure base. Support providing refers to providing support at times of

distress and serving as a secure base for the other. The scores of the two scales were averaged to derive a support composite.

***Conflict.*** Coders rated the amount of conflict within participants' relationships, taking into account both the intensity and frequency of conflict. Interview ratings of conflict were conceptualized as analogous to the self-report of negative interactions on the NRI.

## **Chapter Three: Results**

Prior to beginning analyses, outliers were identified and corrected by adjusting scores to fall 1.5 times the interquartile range below the 25th percentile or above the 75th percentile. The variables in the dataset were examined to ensure that they had acceptable levels of skew and kurtosis (Behrens, 1997).

### **Missing Data**

For the psychosocial adjustment variables, missing data rates due to omission or attrition was low ranging from 0 to 15.10% ( $M = 5.56\%$ ). Missing data rates were slightly higher for the relationship-level variables, as some participants did not experience their first relationship lasting one month or longer by Wave 3 (14%) or did not report on a romantic relationship in Wave 7 or 8 (29%).

This study's specific hypotheses were tested using a series of multilevel models in Mplus version 6 (Muthén, & Muthén, 2001), which uses full information maximum likelihood (FIML) to estimate parameters. FIML provides a powerful alternative to listwise deletion and protects against bias in analyses (Graham, Olchowski, & Gilreath, 2007; Little, Jorgensen, Lang, & Moore, 2014).

### **Determination of At-Risk Subsamples**

The current study primarily aimed to identify individual factors that predicted improvements in relationship quality among adolescents who had a history of poor quality romantic experiences. As such, analyses were run on a subsample of participants

deemed to be “at-risk” because they reported experiencing a poor quality romantic relationship in adolescence. Membership in the at-risk group was determined by examining participants’ first reported romantic relationships occurring in adolescence (Waves 1 through 3, *M* age = 15.88-17.94). In total, 172 participants (86%) described their first relationship during the course of the study in Waves 1 through 3. More specifically, 118 participants (59%) described their first relationship during the course of the study in Wave 1, 37 participants (18.5%) reported their first relationship during the course of the study in Wave 2, and 17 participants (8.5%) reported their first relationship during the course of the study in Wave 3. Twenty participants (10%) eventually reported on an initial romantic relationship in Waves 4 through 8 and were not included in the current study.

In an effort to simplify the variables analyzed, a principal components analysis (Varimax rotation) was conducted using the six indicators of relationship quality gathered from participants describing their first romantic relationship during the course of the study in Waves 1 through 3 (*N* = 172), including interview and self-report negative interactions, interview and self-report relationship support, and interview and self-report relationship satisfaction. Analyses were completed in SPSS Statistics Version 22. Two components with eigenvalues greater than one emerged from this analysis explaining 65.24% of the total variance (Kaiser-Meyer-Olkin Measure of Sample Adequacy= .63). The first component reflected the “positive” indicators of relationship quality including self-report relationship support, interview relationship support, self-report relationship satisfaction, and interview relationship satisfaction. Correlations among these variables



ranged from .29 to .64, all  $ps < .05$ . The second component reflected the “negative” indicators of relationship quality including self-report negative interactions and interview negative interactions. Interview and self-report negative interactions were correlated ( $r = .30, p < .05$ ). Correlations between negative interactions and either satisfaction or support variables were minimal. Based on this analysis, two separate at-risk subgroups were determined. One risk group was based on the positive indicators of relationship quality and was made up of an averaged composite of self-report relationship support, interview relationship support, self-report relationship satisfaction, and interview relationship satisfaction scores. Higher scores on this composite variable indicated better quality. The second risk group was based on the negative indicators of relationship quality and was made up of an averaged composite of self-report and interview negative interactions scores. Higher scores on this composite variable indicated poorer quality.

A median split procedure was used to determine which scores within each of these groups would be considered “at-risk”. Participants whose score across the averaged composite of positive relationship quality indicators (i.e., relationship support & relationship satisfaction) was below the median score for this composite were placed in the risk group for this component. Likewise, participants whose score across the averaged composite of negative relationship quality indicators (i.e., negative interactions) was above the median score for this composite were placed in the risk group for this component. Participants could be in one, both, or neither risk subgroup. With respect to positive indicators of relationship quality, 86 participants were placed in the “at-risk” group because their first reported romantic relationship was the below the median in

terms of relationship satisfaction and relationship support. With respect to negative indicators of relationship quality, 84 participants were placed in the “at-risk” group because their first reported romantic relationship was above the median in terms of negative interactions. All subsequent analyses were run separately on each of these two at-risk subgroups.

Later adult romantic relationships (i.e., those in Waves 7 and 8) were also examined to see how many would be classified as “at-risk” based on the median quality of first relationships reported in Waves 1 through 3. With regard to positive indicators of quality, 23.0% of relationships in Wave 7 and 23.5% of relationships in Wave 8 would be classified as “at-risk.” With regard to negative indicators of quality, 56.9% of relationships in Wave 7 and 47.9% of relationships in Wave 8 would be classified as “at-risk.”

### **Descriptive Analyses**

A series of descriptive analyses were run on study variables. Specifically, the stability of romantic relationship quality was examined using correlations between the quality of participants’ initial romantic relationships and the quality of their emerging adult and adult romantic relationships (Table 1). The stability of adjustment variables was examined using correlations between participants’ scores on adjustment variables at the time of their first romantic relationships and their adjustment scores in adulthood (Table 2). Finally, correlations were run to examine the concurrent associations between romantic relationship quality and adjustment at the time of participants’ first romantic relationships and during adulthood (Table 3).

## Multilevel Models

This study's specific hypotheses were tested using a series of multilevel models in MPlus version 6 (Muthén, & Muthén, 2001). These models broadly tested the impact of individuals' psychosocial adjustment at the time of their first relationship on adult romantic relationship quality as measured at Waves 7 and Wave 8 of the study ( $M$  age Wave 7= 23.7,  $M$  age Wave 8= 25.6). Multilevel modeling in MPlus appropriately accounts for dependency between adult outcomes at Waves 7 and 8.

Two sets of analyses were completed, one on the group at risk based on positive indicators of relationship quality and another for the at-risk group based on negative indicators of relationship quality. Within each of these sets, four separate models were run, each examining the impact of a single indicator of psychosocial adjustment (i.e., self-esteem, internalizing symptoms, externalizing symptoms, & substance use) on adult relationship quality as measured during Waves 7 and 8. Thus, eight models were run in total. All models controlled for the impact of relationship quality at the time of participants' first relationships, therefore, the influence of psychosocial adjustment reflects improvements in relationship quality from the first reported romantic relationship to later romantic relationships.

Hypotheses were tested using the following model:

$$\text{Level 1: } Y_i = \beta_0 + \beta_1(\text{initial relationship quality}) + \beta_2(\text{psychosocial adjustment indicator}) + r_i$$

$$\text{Level 2: } \beta_0 = \gamma_{00} + \gamma_{01}(\text{gender}) + u_0$$

$$\beta_1 = \gamma_{10}$$

$$\beta_2 = \gamma_{20}$$

### **Positive Relationship Quality**

This series of models were run on the sample deemed to be at-risk because their first reported romantic relationship was below the median with respect to positive indicators of quality, including relationship support and relationship satisfaction. Models controlled for the quality of the first reported romantic relationship. Self-esteem, externalizing symptoms, and substance use at the time of participants' first reported romantic relationships were not significantly associated with positive indicators of adult romantic relationship quality. Results are presented in Table 4. Internalizing symptoms were significantly associated with positive indicators of adult romantic relationship quality such that participants with fewer internalizing symptoms at the time of their first relationship experienced greater relationship satisfaction and relationship support in their adult romantic relationships ( $\beta = -0.14 (.06), p < .05$ ).

### **Negative Relationship Quality**

This series of models were run on the sample deemed to be at-risk because their first reported romantic relationship was above the median with respect to negative indicators of quality, specifically, negative interactions. Models controlled for the quality of the first reported romantic relationship. Self-esteem, internalizing symptoms, externalizing symptoms, and substance use at the time of participants' first reported romantic relationships were not significantly associated with negative indicators of adult romantic relationship quality (see Table 4).

## **Sensitivity Analyses**

Three sets of sensitivity analyses were run to better understand the influence of psychosocial adjustment on romantic relationship quality.

### **Risk Subgroups Determined using 33<sup>rd</sup> Percentile**

The first set of sensitivity analyses explored an alternative and more restrictive definition of low quality romantic relationships. Specifically, whereas this study's primary analyses determined membership in the at-risk group by using a median split procedure, this set of sensitivity analyses placed participants in the at-risk group only if their relationship fell below the 33<sup>rd</sup> percentile in terms of quality.

As in the primary set of analyses, two sets of analyses were completed, one on the group at risk based on positive indicators of relationship quality and another for the at-risk group based on negative indicators of relationship quality. Four separate models were run within each set of analyses for a total of eight models. Each model examined the impact of a single indicator of psychosocial adjustment (i.e., self-esteem, internalizing symptoms, externalizing symptoms, and substance use) on adult relationship quality as measured during Waves 7 and 8. All models controlled for initial romantic relationship quality. However, unlike the primary analyses, these models were run on two samples deemed to be at-risk because their first reported romantic relationship was below the 33<sup>rd</sup> percentile with respect to positive indicators of relationship quality including self-report relationship support, interview relationship support, self-report relationship satisfaction, and interview relationship satisfaction; a second at-risk sample was determined based on

falling below the 33<sup>rd</sup> percentile with respect to negative indicators of relationship quality, including self-report negative interactions and interview negative interactions.

Results mirrored the primary analyses (See Table 5). With regard to positive indicators of relationship quality, self-esteem, externalizing symptoms, and substance use at the time of participants' first reported romantic relationships were not significantly associated with positive indicators of adult romantic relationship quality. Internalizing symptoms were significantly associated with positive indicators of adult romantic relationship quality such that participants with fewer internalizing symptoms at the time of their first relationship experienced greater relationship satisfaction and relationship support in their adult romantic relationships ( $\beta=-0.16(.05)$   $p<.01$ ).

With regard to negative indicators of relationship quality, self-esteem, internalizing symptoms, externalizing symptoms, and substance use at the time of participants' first reported romantic relationships were not significantly associated with negative indicators of adult romantic relationship quality.

### **Risk Subgroup Determined Using Both Positive and Negative Qualities**

The second set of sensitivity analyses also explored an alternative and more restricted definition of low quality romantic relationships. Specifically, whereas the primary analyses were run on two separate at-risk subsamples (i.e., one at-risk with regard to positive indicators of quality and another at-risk with regard to negative indicators of relationship the quality), this set of analyses was conducted on only one at-risk subsample. Participants were placed into this at-risk group if their initial romantic relationship scored below the median with regard to both positive indicators of

relationship quality (i.e., self-report relationship support, interview relationship support, self-report relationship satisfaction, and interview relationship satisfaction) *and* negative indicators of relationship quality (i.e., self-report negative interactions and interview negative interactions). Therefore, this set of sensitivity analyses were run on a subsample of participants whose initial romantic relationships were low quality (i.e., below the median) with regard to both positive *and* negative indicators of romantic relationship quality ( $N= 42$ ), whereas the primary analyses were run on participants whose first romantic relationship were poor quality with regard to one or the other, or both.

Although all models were run on this singular at-risk subsample, two sets of models were run just as in the primary analyses, one examining improvement with regard to positive indicators of romantic relationship quality and another examining improvement with regard to negative indicators of romantic relationship quality. Four separate models were run within each set of analyses for a total of eight models. Each model examined the impact of a single indicator of psychosocial adjustment (i.e., self-esteem, internalizing symptoms, externalizing symptoms, and substance use) on adult relationship quality as measured during Waves 7 and 8. All models controlled for initial romantic relationship quality.

With regard to improvement in positive indicators of relationship quality, self-esteem, internalizing symptoms, externalizing symptoms, and substance use at the time of participants' first reported romantic relationships were not significantly associated with improvement in adult romantic relationship quality (See Table 6).

With regard to improvement in negative indicators of relationship quality, self-esteem, internalizing symptoms, externalizing symptoms, and substance use at the time of participants' first reported romantic relationships were not significantly associated with improvement in adult romantic relationship quality (See Table 6).

### **Predicting Improvements in Emerging Adulthood Relationship Quality**

The third and final set of sensitivity analyses explored the impact of psychosocial adjustment on improvement in relationship quality in emerging adulthood. Whereas the primary analyses utilized romantic relationship quality in Waves 7 and 8 (*M* age Wave 7= 23.7, *M* age Wave 8= 25.6) as outcomes, this set of analyses explored romantic relationship quality in Waves 4, 5, and 6 (*M* age Wave 4= 19.0, *M* age Wave 5= 20.5, *M* age Wave 6= 22.1).

As in the primary set of analyses, two sets of analyses were completed, one on the group at risk based on positive indicators of relationship quality and another for the at-risk group based on negative indicators of relationship quality. Four separate models were run within each set of analyses for a total of eight models. Each model examined the impact of a single indicator of psychosocial adjustment (i.e., self-esteem, internalizing symptoms, externalizing symptoms, and substance use) on later romantic relationship quality; however, whereas the primary analyses examined relationship quality at Waves 7 and 8, this set of analyses examined relationship quality at Waves 4, 5 and 6. All models controlled for initial romantic relationship quality.

With regard to positive indicators of relationship quality, self-esteem, internalizing symptoms, externalizing symptoms, and substance use at the time of



participants' first reported romantic relationships were not significantly associated with positive indicators of adult romantic relationship quality (See Table 7).

With regard to negative indicators of relationship quality, self-esteem, internalizing symptoms, and substance use at the time of participants' first reported romantic relationships were not significantly associated with negative indicators of adult romantic relationship quality. Externalizing symptoms were significantly associated with negative indicators of emerging adult romantic relationship quality such that participants with fewer externalizing symptoms at the time of their first relationship experienced fewer negative interactions in their emerging adult romantic relationships ( $\beta = 0.14 (.07)$ ,  $p < .05$ ; See Table 7).

## **Chapter Four: Discussion**

Individuals' experiences within their romantic relationships at different developmental stages are linked both theoretically and empirically. Longitudinal research has demonstrated that adolescents who experience poor quality romantic relationships are at heightened risk for later poor quality romantic relationships in adulthood (Madsen & Collins, 2011). However, despite researchers calling for studies that examine variation in such developmental trajectories (Collins, 2013), previous empirical work has not tested factors that may impact the link between adolescent and adult romantic relationships. This gap in the literature limits our understanding of those adolescents who, due to poor quality early romantic experiences, face heightened risk in their adult relationships. Although some members of this at-risk group will surely go on to experience improvements in their later relationship quality, the existing literature does not effectively characterize what factors may predict or support such improvement.

The goal of the current study was to examine whether aspects of individuals' psychosocial adjustment at the time of their first adolescent romantic relationship predicted improvements in the quality of their subsequent romantic relationships. Several indicators of psychosocial adjustment were examined including self-esteem, internalizing symptoms, externalizing symptoms, and substance use. Overall, individuals' self-esteem, externalizing symptoms, and substance use at the time of their first relationship did not predict improvements in subsequent romantic relationship quality. Individuals'

internalizing symptoms at the time of their first relationship, in contrast, did predict improvements in later relationship quality such that adolescents who had fewer internalizing symptoms were more likely to experience improved relationship satisfaction and support in adulthood. Interestingly, whereas this finding held true when looking at positive indicators of relationship quality, it did not hold for negative indicators of relationship quality.

The finding that internalizing symptoms predict improvements in romantic relationship quality is consistent with prior research linking internalizing symptoms and relationship quality. For example, using data from the National Longitudinal Study of Adolescent Health, Johnson and Galambos (2014) found that individuals with fewer depressive symptoms were more likely to experience higher quality romantic relationships later in life. Notably, this work measured relationship quality using seven items asking about satisfaction, enjoyment, trust, and support, which closely align with the current study's construct of positive relationship quality (Johnson & Galambos, 2014). Additionally, in an earlier analysis of the same data set used in the present study, Vujeva and Furman (2011) found that adolescents with fewer depressive symptoms experienced more substantial increases in positive problem solving across their subsequent romantic relationships compared to peers who had greater depressive symptoms earlier in adolescence. Together with prior research, the results of the current study suggest that individuals with fewer internalizing symptoms at the time of their first relationship are more likely to experience improvements in quality in their adult romantic relationships, specifically relationship satisfaction and support. In contrast, adolescents

experiencing higher internalizing symptoms at the time of their first relationships may experience fewer such improvements.

From a theoretical standpoint, work such as the stress and coping model argue that all romantic relationships are inherently stressful experiences and place a high demand on individuals' coping skills (Davila, 2008). Indeed, poor quality adolescent romantic relationships may place even greater stress on the individuals within them, such as by featuring more frequent or severe disagreements or less emotional support, compared to higher quality relationships. Individuals with fewer internalizing symptoms may be better equipped to cope with these and other stressors inherent to romantic relationships. They may be more likely to adapt and respond to these demands by learning more effective conflict management strategies, increasing their capacity for emotional support, or selecting better suited partners, all of which may result in better quality romantic relationships in the future.

In contrast, individuals with greater internalizing symptoms appear to be more likely to continue experiencing poor quality romantic relationships into adulthood. Individuals with greater internalizing symptoms likely have fewer coping skills or emotion regulation resources and may therefore be less able to adapt and respond to their initial relationship stressors. Some prior research suggests that individuals with greater internalizing symptoms are more likely to choose non-supportive partners who are themselves experiencing their own mental health difficulties (Daley & Hammen, 2002).

Further, adolescents with greater internalizing symptoms who experience poor quality romantic relationships may be more significantly impacted by the relationship and

its negative features than an adolescent with fewer internalizing symptoms. That is, their poor quality romantic relationship in adolescence may result in increased internalizing symptoms which contribute to their future risk for poor quality romantic relationships in adulthood. Consistent with this idea, internalizing symptoms show moderate stability from adolescence to adulthood (see Table 2). In addition, adolescents with greater internalizing symptoms who experience poor quality romantic relationships may be more likely to have negative expectations regarding future relationships. Whereas adolescents with fewer internalizing symptoms may chalk up a poor quality romantic experience to some external or modifiable factor (e.g., bad luck, their partner's fault, inexperience) and be hopeful about future romantic experiences, adolescents with greater internalizing symptoms may consider poor relationships to be due to more internal or less modifiable factors (e.g., some personal flaw, fate, the inherent nature of romantic relationships) and have less hopeful expectations about future relationships. This negative expectation for future relationship may impact their approach to future relationships or their partner selection and make them more prone to poor quality relationships moving forward.

From a prevention and intervention standpoint, then, internalizing symptoms emerge as one potential individual factor of interest for those seeking to promote high quality adult romantic relationships. Previous work has suggested that all individuals who experience poor quality adolescent romances are at heightened risk in their future relationships. However, the findings of the current study, though preliminary, suggest that those individuals with fewer internalizing symptoms may be at less risk as they are more likely to experience improvements in subsequent relationship quality. Future

research could expand upon this work by exploring whether directly supporting individuals' coping skills can result in improved romantic outcomes. Individuals' degree of internalizing symptoms may serve as an important metric that helps identify those who are most at risk for continued poor outcomes and might therefore benefit from broader relationship-building skills, such as communication or problem solving training.

Whereas the current study did not find a significant association between internalizing symptoms and later changes in negative indicators of relationship quality, specifically conflict, Vujeva and Furman (2011) demonstrated that lower depressive symptoms were associated with less rapid increases in conflict across time. Given this prior work, it is unclear why internalizing symptoms in the current study were only associated with improvement in positive indicators of relationship quality (i.e., support and satisfaction) and not with negative indicators of relationship quality (i.e., conflict). One potential reason for the differing results may be that Vujeva and Furman (2011) explored depressive symptoms only, whereas the current study explored the associated between internalizing symptoms, more broadly, and negative indicators of relationship quality. Perhaps anxiety symptoms, which were included in the current study's analyses, are less predictive of heightened increases in conflict across time than are depressive symptoms.

The lack of findings regarding self-esteem, externalizing symptoms, and substance use are counterintuitive given the existing literature demonstrating links between adjustment and adult relationship quality. With regard to self-esteem, the findings of the current study stand in contrast to prior longitudinal research demonstrating

links between self-esteem and adult romantic relationship quality. For example, Johnson and Galambos (2014) found that adolescents with higher self-esteem were more likely to have higher quality romantic relationships in adulthood. Similarly, prior longitudinal work suggests that higher substance use and externalizing symptoms during adolescence are later associated with lower rates of romantic relationship satisfaction and higher conflict (Raudino et al., 2012).

Importantly, some of this prior work relied on more limited measurement of relationship quality than the current study, which may be one reason that the current study did not find associations between externalizing symptoms, substance use, and self-esteem and later relationship quality where previous work did. For example, Raudino and colleagues (2012) asked participants' about their feelings of love and relationship investment to measure relationship satisfaction. They asked about conflict and doubts and uncertainties about the relationship to measure relationship conflict (Raudino et al., 2012). This stands in contrast to the current study, which utilized a composite measure of both relationship satisfaction and relationship support as one indicator of quality and a second composite measure of negative interactions as another indicator of quality. This difference in the measurement of relationship quality may have played a role in the current study's differing results.

In addition, the measures in the current study consisted of both self-report and interview data, whereas prior work relied exclusively on self-report. In supplemental analyses examining the current study's self-report data only, lower externalizing symptoms at the time of participants' first romantic relationships were associated with

improvements in negative indicators of romantic relationship quality in adulthood (See Table 8). Although this result is more in line with the findings of Raudino and colleagues (2012), the remaining results mirrored those of the primary analyses (i.e., lower internalizing symptoms continued to predict improvements in positive indicators of relationship quality; self-esteem and substance use did not predict change; See Tables 8 & 9). Therefore, the current study's decision to use a composite of self-report and interview measures of quality may explain some but not all differences with prior work.

Further, although prior research demonstrates links between psychosocial adjustment and later romantic relationship quality, it did not explicitly explore these links using a sample determined to be at high-risk for poor quality adult romantic outcomes. That is, this prior research explored links between adjustment and adult romantic relationship quality in samples of adolescents who had experienced a wide range of romantic relationship quality in adolescence, from high quality to low quality experiences and those in between. In contrast, the current study explored a specific subset of participants who reported experiencing a poor quality romantic relationship in adolescence. This subset was of particular interest due to prior research suggesting that, because they had experienced a poor quality romantic relationship in adolescence, they were at substantially higher risk of poor quality romantic relationships in adulthood (Madsen & Collins, 2011).

Among this higher risk subset of participants, it appears that many aspects of psychosocial adjustment may not predict adult romantic outcomes in the same way that they do in a sample of participants who have experienced a broader range of earlier



romantic experiences. One explanation may be that the variability of psychosocial adjustment among participants is substantially reduced in such a higher risk subset. That is, participants in the higher risk subset may more closely resemble one another with regard to their psychosocial adjustment, whereas there may be more variability in the psychosocial adjustment of a larger sample of youth who had experienced a range of earlier romantic experiences. This restricted range in the present sample may have attenuated the associations between psychosocial adjustment and romantic quality.

Within the current at-risk subsample, romantic relationship quality is not stable across time. That is, romantic relationship quality in adolescence is not significantly correlated with the quality of romantic relationships in adulthood (see Table 1). Within the sample determined to be at-risk based on positive indicators of relationship quality, initial romantic relationship quality is not significantly correlated with adult romantic relationship quality, nor with emerging adult romantic relationship quality (see discussion of sensitivity analyses below). Within the sample determined to be at-risk based on negative indicators of relationship quality, initial romantic relationship quality is not significantly correlated with adult romantic relationship quality, however, adolescent romantic relationship quality is significantly correlated with emerging adult romantic relationship quality (see discussion of sensitivity analyses below). Negative indicators of romantic relationship quality show slightly more stability than do the positive indicators. Given the current study's hypothesis that adjustment would impact the link between adolescent and adult romantic relationship quality, it was not anticipated that relationship quality at these two time points would be perfectly correlated. However, such a

significant lack of stability between early and later romantic relationship quality may have led to limited findings.

Another explanation for the current study's general lack of significant findings could be that psychosocial adjustment does not represent an individual difference predictive of later quality, as argued in the introduction. To the extent that individuals' scores on adjustment variables vary across time, they may be less likely to predict distal outcomes. However, the individual adjustment variables analyzed in the current study were moderately stable between the time of participants' first relationships and adulthood (see Table 2).

An additional factor which likely impacted the lack of significant associations between externalizing symptoms, substance use, and self-esteem and later improvements in romantic relationship quality is the pattern of concurrent associations between these adjustment variables and relationship quality in adolescence. Only externalizing symptoms and substance use are significantly correlated with initial romantic relationships quality, and the correlations are weak at best (see Table 3). Given that psychosocial adjustment is not strongly associated with romantic relationship quality during adolescence, it is unsurprising that adjustment does not tend to be predictive of later improvements in romantic relationship quality. At the same time, concurrent correlations between psychosocial adjustment and romantic quality were much stronger in adulthood than in adolescence (see Table 3). Therefore, it may be more important to look at the impact of later psychosocial adjustment on improvement in adult romantic relationship quality than the impact of early psychosocial adjustment.

Another possible explanation for the current study's general lack of significant findings is that experiencing a poor quality romantic relationship in adolescence may not be as significant a risk factor for future romantic functioning as previously thought. Although work by Madsen and Collins (2011) demonstrated associations between adolescent romantic relationship quality and later adult romantic relationships, they examined a full range of initial romantic relationship experiences in adolescence, whereas we examined only those adolescents with low quality romantic relationships. This decision may have left the current study underpowered to detect a significant influence of variables that, in reality, may only have a minimal to modest impact on improvements from adolescent and adult romantic relationships, especially compared to the larger sample size of Madsen and Collins (2011).

Although the low stability of romantic relationship quality from adolescence to adulthood suggests that some individuals who experience poor quality romantic relationships in adolescence may go on to experience improvements in their later relationship quality, individual adjustment variables may not be strongly associated with such change. Perhaps other factors are more influential. For example, as opposed to examining individual-level variables such as adjustment, it may be more fruitful to explore functioning within other types of close relationships as one factor that may influence the impact of early adolescent romantic quality on later romantic relationship quality. Relationships with peers and parents stand out as two possibilities. Perhaps those adolescents who experience a poor quality romantic relationship but have high quality relationships with either their peers or their parents may be more likely to experience

later improvements in romantic relationship quality. This might be in contrast to those adolescents who not only experience a poor quality romantic relationship but also have poor quality friendships and relationships with their parents, as well. Adolescents in this latter group showing a pattern of difficulties across different relationship types may have more significant and stable relationship skill deficits, such as communication or conflict management, which would be more likely to impact future relationship quality. In contrast, those adolescents who experience a poor quality romantic relationship but have better functioning across their relationships with parents and peers may be able to utilize the skills they use in other relationships to improve the quality of their later romantic relationships, whether by choosing different romantic partners or learning more quickly from their initial romantic experiences. Such possibilities represent an exciting future direction and warrant future research.

In addition, the current study explored the impact of individual-level variables on changes in relationship quality. However, future research may wish to examine partner variables, such as partner psychosocial adjustment, in conjunction with individual adjustment. Perhaps adolescents with better psychosocial adjustment whose initial romantic partners are also well-adjusted may be more likely to go on to experience improvements in later romantic relationship quality. Associations between partner and individual adjustment and later relationship quality warrant future research.

Given the myriad of factors described up to this point that each could contribute to a pattern of null findings, it is ultimately somewhat surprising that internalizing symptoms at the time of the first relationship do predict later adult romantic relationship

quality. Ultimately, additional research is needed to further elucidate the links (or lack thereof) between individual adjustment and romantic relationship experiences across both adolescence and adulthood. At the same time, future research should explore additional factors (i.e., functioning in other close relationships, the impact of multiple poor quality romantic relationships) to better understand the link between adolescent and adult romantic relationship quality.

One significant strength of the current study was the set of sensitive analyses run. These analyses were run to better understand the impact of using different definitions of low quality romantic relationships as well as to explore outcomes in different developmental stages. First, two sets of sensitivity analyses used differing definitions or cutoff points to determine which adolescents had had a low quality romantic relationship and were therefore at-risk. When membership in the low quality, at-risk group was granted only for those participants who had quality scores in the bottom 33<sup>rd</sup> percentile, results mirrored the main analyses which used the slightly less restricted cutoff of the 50<sup>th</sup> percentile. That is, internalizing symptoms still significantly predicted improvement in romantic relationship quality. However, internalizing symptoms were no longer a significant predictor of improvement in a second set of sensitivity analyses, in which risk was determined based on having scores below the 50<sup>th</sup> percentile on *both* the positive and negative indicators of relationship quality. Taken together these results suggest, unsurprisingly, that the way we define low quality impacts results. One possible explanation for differing findings is that internalizing symptoms are not predictive of negative indicators of relationship quality (i.e., conflict) and therefore combining these

with the positive indicators of relationship quality (i.e., support and satisfaction) washes out the effect that internalizing symptoms do have on positive indicators of quality. In addition, more restrictive definitions of quality resulted in smaller sample sizes and lower power than those used in the main analyses. Running a similar pattern of analyses on a bigger sample size may provide additional insight into these effect.

A final set of sensitivity analyses examined the impact of psychosocial adjustment on improvement in relationship quality in emerging adulthood (*M* age 19.0-22.1) as opposed to adulthood (*M* age 23.7-25.6) as in the main analyses. In this set of analyses, externalizing symptoms were significantly associated with improvement in emerging adult romantic relationship quality per negative indicators of quality (i.e., negative interactions or conflict). Adolescents with fewer externalizing symptoms had lower negative interactions in their emerging adult relationships. This finding is consistent with prior work demonstrating that adolescents with higher externalizing symptoms experience poorer quality romantic relationships later in life, specifically relationships that are more conflictual and less satisfying (Raudino et al., 2012).

Adolescents with higher externalizing symptoms may have poorer emotion regulation. They may therefore be more likely to experience conflict in subsequent romantic relationships compared to peers with better emotion regulation. Similarly, adolescents with higher externalizing symptoms may be more prone to physical aggression during conflict or have deficits in conflict resolution that carry over into subsequent romantic experiences. Adolescents with higher externalizing symptoms may also be more likely to select romantic partners who themselves have higher externalizing

symptoms and the poorer emotion regulation, tendency toward physical aggression, and worse conflict resolution that may go along with them. Partner selection effects may therefore be one factor contributing to these adolescents' risks for future poor quality romantic relationships.

Interestingly, although externalizing symptoms are associated with poorer romantic relationship quality in emerging adulthood, they are not significantly associated with romantic relationship quality later in adulthood. One explanation may be that adolescents with higher externalizing symptoms benefit from additional relationship experiences occurring throughout late adolescence and emerging adulthood, during which time they may learn better strategies for managing conflict within their relationships. By the time they are in their adult romantic relationships, then, the impact of their early externalizing symptoms could have been mitigated by increased opportunities to learn and grow within romantic relationships.

It is also interesting that externalizing symptoms were associated with negative but not positive indicators of romantic relationships quality in emerging adulthood. Indeed, this finding contrasts with prior work linking externalizing behaviors to both conflict and satisfaction within romantic relationships (Raudino et al., 2012). In contrast to prior work, however, the current study examined the association between externalizing symptoms and an aggregate of relationship satisfaction *and* support, which may have resulted in a different pattern of results. Moreover, externalizing symptoms by their nature seem closely aligned with negative interactions and conflict resolution, both of which were used as negative indicators of romantic relationship quality in the current

study. Future research should further explore the associations between externalizing symptoms and both positive and negative indicators of romantic relationship quality across adulthood to better understand this pattern of results.

None of the remaining indicators of individual adjustment (i.e., internalizing symptoms, self-esteem, and substance use) predicted improvement in relationship quality in emerging adulthood. It is somewhat surprising that internalizing symptoms do not predict improvement in emerging adult romantic relationship quality because they do predict improvement in later adult romantic relationship quality. One explanation might be that the impact of early adjustment on relationship improvement may not emerge until somewhat later in adulthood, possibly due to the instability of the emerging adulthood period as argued by developmental task theory (Roisman et al., 2004). Future research may wish to explore this idea further by examining whether early adjustment is associated with improvements in relationship quality later on in adulthood, as well, such as beyond the mean age of 25.6 examined in the current study. Perhaps more individual adjustment variables predict improvements occurring by middle or later adulthood.

In addition to these sensitivity analyses, the present study has several notable strengths. First, it made use of longitudinal data collected across nearly ten years of adolescence and early adulthood enabling a thorough investigation of relationships occurring across these developmental stages. Relationship quality was measured using both positive (i.e., relationship support and satisfaction) and negative (i.e. relationship conflict) indicators and, notably, self-report and interview-rated scores within each. This represents a significantly more comprehensive measurement of relationship quality than



is used in much of the existing literature. The current study also relied on robust measures of adolescent adjustment; internalizing symptoms, externalizing symptoms, substance use, and self-esteem were all measured using composites of self-report data along with and parent-and peer-report.

The current study is not without limitations, however. One significant limitation is the current study's limited sample size. This study focused solely on participants who had initially experienced a low quality romantic relationship during adolescence, however, this question resulted in a restricted sample size. As a result, the current study may have had a limited ability to detect modest associations which would have been detected within in a larger sample.

In addition, the current study examined improvement for those participants whose initial romantic relationship was low quality. However, participants were asked about their most influential relationship occurring within the past year when they were in the 10<sup>th</sup> grade. It is very possible that participants had a relationship that occurred prior to the 10<sup>th</sup> grade, and thus would not have been accounted for during this study. Further, participants may have had more than one relationship during the 10<sup>th</sup> grade yet were asked to report only on the relationship they deemed to be most influential. The impact of relationships occurring before 10<sup>th</sup> grade or those relationships deemed less influential may have had a different association with adjustment and later relationship quality. It is possible that some romantic relationships carry more impact than others, and it may not be the relationship deemed "most influential" by participants. Perhaps the longest romantic relationship across all of adolescence is more impactful. Alternatively, the most

negative or conflictual relationship may carry the most impact or, conversely, the most positive relationship across this time span. These ideas warrant future investigation.

Finally, the current study examined the impact of having a single, initial low quality relationship in adolescence, without accounting for the impact of other romantic relationships occurring during this developmental stage. For adolescents who have multiple poor quality romantic relationships, adjustment and improvements in later quality may have a different pattern of associations.

Despite these limitations, the current study represents a thorough investigation of the role of individual adjustment in the link between adolescent and adult romantic relationship quality. Among those adolescents who experienced a poor quality romantic relationship and were therefore at-risk for poor quality adult romantic relationships, most of the indicators of individual adjustment examined did not significantly predict improvement in adult relationship quality. The notable exception is internalizing symptoms, which, with due caution, should be further studied as a potential factor that can promote high quality adult romantic relationships. Similarly, although not associated with adult romantic relationship quality, externalizing symptoms were associated with romantic relationship quality in emerging adulthood and warrant future research. Looking forward, it will be important for future research to explore other variables that may predict improvement in romantic relationship quality for those adolescents at-risk for poor outcomes. In sum, the present results contribute to the field's understanding of the association between adolescent and adult romantic relationships and highlights several areas for future research.

## **Chapter Five: Summary**

This study sought to address a gap in the existing literature by examining whether individual adjustment predicted improvements in romantic relationship quality from adolescents to adulthood. First, participants whose initial romantic relationships were poor quality based on either positive (i.e., relationship satisfaction, support) or negative (i.e., conflict) indicators of romantic relationship quality were placed into subgroups deemed to be at heightened risk for poor quality romantic relationships in adulthood. These participants' scores on individual adjustment variables (i.e., internalizing and externalizing symptoms, substance use, and self-esteem) were then used to predict improvements in the quality of their adult romantic relationships.

The current study possessed a number of methodological strengths, including its reliance on longitudinal data collected across nearly ten years of adolescence and early adulthood. Relationship quality was assessed using both self-report and interview data and individual adjustment was assessed using self- as well as parent- and peer-reports.

Results indicated that most markers of individual adjustment examined (i.e., externalizing symptoms, substance use, and self-esteem) did not significantly predict improvement in adult romantic relationship quality. Internalizing symptoms, however, were found to significantly predict improvements in adult romantic relationship quality such that adolescents who reported fewer internalizing symptoms were more likely to experience improved romantic relationship quality in adulthood. Externalizing symptoms

were found to significantly predict improvements in emerging adult romantic relationship quality such that adolescents who reported fewer externalizing symptoms were more likely to experience improved relationship quality in emerging adulthood. Notably, there was little overall stability of romantic relationship quality from adolescence to adulthood.

Taken together, the current findings indicate that internalizing and externalizing symptoms may be important areas of future research for investigators interested in factors that may support high quality romantic relationships later in development. However, additional research is clearly needed to better understand the links between individual adjustment and relationship quality across development. At the same time, it will be important for future research to expand in scope to include other factors that may be associated with improvements in relationship quality from adolescence to adulthood.

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## Appendix A

*Table 1.* Correlations between initial romantic relationship quality and later relationship quality.

	Initial Positive Relationship Quality	Initial Negative Relationship Quality
Emerging Adult Romantic Quality (Waves 4, 5, & 6)	.07	.33**
Adult Romantic Quality (Waves 7& 8)	-.04	.27

*Note:* \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

*Table 2. Correlations between adjustment at the time of participants' first romantic relationships and adjustment in adulthood (Waves 7 & 8).*

	Positive	Negative
Internalizing	.33**	.25*
Externalizing	.45***	.45***
Substance Use	.32**	.35**
Self-Esteem	.36***	.30**

*Note:* \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

*Table 3. Concurrent associations between romantic relationship quality and adjustment at the time of the first relationship and adulthood (Wave 7 & 8).*

	Positive		Negative	
	Time of First Relationship	Adulthood	Time of First Relationship	Adulthood
Internalizing	-.07	-.53 <sup>***</sup>	.12	.45 <sup>**</sup>
Externalizing	-.18 <sup>*</sup>	-.38 <sup>***</sup>	.28 <sup>*</sup>	.37 <sup>*</sup>
Substance Use	-.19 <sup>*</sup>	-.29 <sup>***</sup>	.01	.22 <sup>**</sup>
Self-Esteem	.11	.41 <sup>***</sup>	-.11	-.25 <sup>*</sup>

*Note:* <sup>\*</sup>  $p < .05$ ; <sup>\*\*</sup>  $p < .01$ ; <sup>\*\*\*</sup>  $p < .001$

Table 4. Results from multilevel models using median split.

	Positive	Negative
<b><u>Internalizing</u></b>		
Intercept ( $\beta_0$ )	-1.05(.05) <sup>***</sup>	0.38(.07) <sup>***</sup>
Initial Quality ( $\beta_1$ )	-0.08(.12)	0.28(.15)
Internalizing ( $\beta_2$ )	-0.14(.06) <sup>*</sup>	-0.02(.07)
Gender ( $\gamma_{01}$ )	0.26(.13)	-0.11(.16)
<b><u>Externalizing</u></b>		
Intercept ( $\beta_0$ )	-1.05(.05) <sup>***</sup>	0.38(.07) <sup>***</sup>
Initial Quality ( $\beta_1$ )	-0.09(.12)	0.22(.15)
Externalizing ( $\beta_2$ )	-0.11(.07)	0.11(.07)
Gender ( $\gamma_{01}$ )	0.21(.14)	-0.09(.15)
<b><u>Substance Use</u></b>		
Intercept ( $\beta_0$ )	-1.05(.05) <sup>***</sup>	0.38(.07) <sup>***</sup>
Initial Quality ( $\beta_1$ )	-0.02(.13)	0.26(.15)
Substance Use ( $\beta_2$ )	0.06(.08)	-0.12(.13)
Gender ( $\gamma_{01}$ )	0.24(.14)	-0.17(.17)
<b><u>Self-Esteem</u></b>		
Intercept ( $\beta_0$ )	-1.05(.05) <sup>***</sup>	0.38(.07) <sup>***</sup>
Initial Quality ( $\beta_1$ )	-0.06(.12)	0.27(.15)
Self-Esteem ( $\beta_2$ )	0.06(.07)	-0.02(.07)
Gender ( $\gamma_{01}$ )	0.22(.14)	-0.12(.16)

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ .

Note: These models test the associations between adjustment at the time of the first romantic relationship and adult romantic relationship quality (Waves 7 & 8) among individuals with low quality initial romantic relationships (positive and negative) per median split.

Table 5. Results from multilevel models using 33<sup>rd</sup> percentile split.

	Positive	Negative
<b><u>Internalizing</u></b>		
Intercept ( $\beta_0$ )	-1.32(.06)***	0.66(.08)***
Initial Quality ( $\beta_1$ )	-0.12(.19)	0.27(.19)
Internalizing ( $\beta_2$ )	-0.16(.05)**	-0.06(.09)
Gender ( $\gamma_{01}$ )	0.41(.17)*	-0.12(.19)
<b><u>Externalizing</u></b>		
Intercept ( $\beta_0$ )	-1.32(.06)***	0.66(.08)***
Initial Quality ( $\beta_1$ )	-0.15(.19)	0.23(.19)
Externalizing ( $\beta_2$ )	-0.15(.14)	0.13(.08)
Gender ( $\gamma_{01}$ )	0.26(.19)	-0.10(.18)
<b><u>Substance Use</u></b>		
Intercept ( $\beta_0$ )	-1.32(.06)***	0.66(.08)***
Initial Quality ( $\beta_1$ )	-0.06(.20)	0.24(.19)
Substance Use ( $\beta_2$ )	0.12(.07)	-0.10(.13)
Gender ( $\gamma_{01}$ )	0.34(.19)	-0.19(.19)
<b><u>Self-Esteem</u></b>		
Intercept ( $\beta_0$ )	-1.32(.06)***	0.66(.08)***
Initial Quality ( $\beta_1$ )	-0.11(.20)	0.26(.19)
Substance Use ( $\beta_2$ )	0.05(.09)	-0.02(.10)
Gender ( $\gamma_{01}$ )	0.30(.18)	-0.15(.19)

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ .

Note: These models test the associations between adjustment at the time of the first romantic relationship and adult romantic relationship quality (Waves 7 & 8) among individuals with low quality initial romantic relationships (positive and negative) per 33<sup>rd</sup> percentile split.

Table 6. Results from multilevel models with both low quality positive and negative indicators.

	Positive	Negative
<b><u>Internalizing</u></b>		
Intercept ( $\beta_0$ )	-0.98(.08) <sup>***</sup>	0.54(.10) <sup>***</sup>
Initial Quality ( $\beta_1$ )	-0.10(.16)	0.03(.23)
Internalizing ( $\beta_2$ )	0.00(.11)	-0.13(.15)
Gender ( $\gamma_{01}$ )	0.28(.19)	-0.14(.25)
<b><u>Externalizing</u></b>		
Intercept ( $\beta_0$ )	-0.98(.08) <sup>***</sup>	0.54(.10) <sup>***</sup>
Initial Quality ( $\beta_1$ )	-0.11(.15)	-0.07(.20)
Externalizing ( $\beta_2$ )	-0.03(.07)	0.21(.11)
Gender ( $\gamma_{01}$ )	0.27(.14)	-0.02(.24)
<b><u>Substance Use</u></b>		
Intercept ( $\beta_0$ )	-0.98(.08) <sup>***</sup>	0.54(.10) <sup>***</sup>
Initial Quality ( $\beta_1$ )	-0.06(.16)	0.01(.21)
Substance Use ( $\beta_2$ )	0.15(.08)	-0.08(.14)
Gender ( $\gamma_{01}$ )	0.39(.20) <sup>*</sup>	-0.20(.27)
<b><u>Self-Esteem</u></b>		
Intercept ( $\beta_0$ )	-0.98(.08) <sup>***</sup>	0.54(.10) <sup>***</sup>
Initial Quality ( $\beta_1$ )	-0.10(.14)	0.01(.21)
Self-Esteem ( $\beta_2$ )	-0.01(.09)	-0.06(.14)
Gender ( $\gamma_{01}$ )	0.28(.20)	-0.15(.26)

<sup>\*</sup>  $p < .05$ ; <sup>\*\*</sup>  $p < .01$ ; <sup>\*\*\*</sup>  $p < .001$ .

*Note:* These models test the associations between adjustment at the time of the first romantic relationship and adult romantic relationship quality (Waves 7 & 8) among individuals with initial romantic relationships that are low quality both in positive and negative indicators per median split.



Table 7. Results from multilevel models in emerging adulthood.

	Positive	Negative
<b><u>Internalizing</u></b>		
Intercept ( $\beta_0$ )	-1.05(.05) <sup>***</sup>	0.38(.07) <sup>***</sup>
Initial Quality ( $\beta_1$ )	0.06(.14)	0.33(.12) <sup>**</sup>
Internalizing ( $\beta_2$ )	-0.04(.07)	-0.02(.06)
Gender ( $\gamma_{01}$ )	0.18(.14)	-0.12(.14)
<b><u>Externalizing</u></b>		
Intercept ( $\beta_0$ )	-1.05(.05) <sup>***</sup>	0.38(.07) <sup>***</sup>
Initial Quality ( $\beta_1$ )	0.03(.13)	0.25(.12) <sup>*</sup>
Externalizing ( $\beta_2$ )	-0.09(.07)	0.14(.07) <sup>*</sup>
Gender ( $\gamma_{01}$ )	0.15(.14)	-0.09(.14)
<b><u>Substance Use</u></b>		
Intercept ( $\beta_0$ )	-1.05(.05) <sup>***</sup>	0.38(.07) <sup>***</sup>
Initial Quality ( $\beta_1$ )	0.08(.14)	0.33(.12) <sup>**</sup>
Substance Use ( $\beta_2$ )	0.06(.06)	0.00(.08)
Gender ( $\gamma_{01}$ )	0.18(.15)	-0.13(.15)
<b><u>Self-Esteem</u></b>		
Intercept ( $\beta_0$ )	-1.05(.05) <sup>***</sup>	0.38(.07) <sup>***</sup>
Initial Quality ( $\beta_1$ )	0.06(.14)	0.34(.12) <sup>**</sup>
Self-Esteem ( $\beta_2$ )	0.02(.07)	0.07(.07)
Gender ( $\gamma_{01}$ )	0.17(.15)	-0.12(.14)

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ .

Note: These models test associations between adjustment at the time of the first romantic relationship and emerging adult romantic relationship quality (Waves 4, 5, & 6) among individuals with low quality initial romantic relationships (positive and negative) per median split.

Table 8. Results from multilevel models with self-report data only.

	Positive	Negative
<b><u>Internalizing</u></b>		
Intercept ( $\beta_0$ )	-1.16(.06) <sup>***</sup>	0.68(.09) <sup>***</sup>
Initial Quality ( $\beta_1$ )	-0.10(.13)	0.28(.14) <sup>*</sup>
Internalizing ( $\beta_2$ )	-0.21(.07) <sup>**</sup>	0.00(.08)
Gender ( $\gamma_{01}$ )	0.44(.16) <sup>**</sup>	-0.17(.20)
<b><u>Externalizing</u></b>		
Intercept ( $\beta_0$ )	-1.16(.06) <sup>***</sup>	0.68(.09) <sup>***</sup>
Initial Quality ( $\beta_1$ )	-0.10(.14)	0.21(.14)
Externalizing ( $\beta_2$ )	-0.18(.11)	0.19(.08) <sup>*</sup>
Gender ( $\gamma_{01}$ )	0.31(.17)	-0.12(.18)
<b><u>Substance Use</u></b>		
Intercept ( $\beta_0$ )	-1.16(.06) <sup>***</sup>	0.68(.09) <sup>***</sup>
Initial Quality ( $\beta_1$ )	-0.06(.13)	0.28(.13) <sup>*</sup>
Substance Use ( $\beta_2$ )	0.09(.08)	-0.09(.10)
Gender ( $\gamma_{01}$ )	0.36(.17) <sup>*</sup>	-0.21(.20)
<b><u>Self-Esteem</u></b>		
Intercept ( $\beta_0$ )	-1.16(.06) <sup>***</sup>	0.68(.09) <sup>***</sup>
Initial Quality ( $\beta_1$ )	-0.05(.14)	0.28(.13) <sup>*</sup>
Self-Esteem ( $\beta_2$ )	0.03(.08)	0.01(.08)
Gender ( $\gamma_{01}$ )	0.34(.04) <sup>*</sup>	-0.17(.19)

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ .

Note: These models test associations between adjustment at the time of the first romantic relationship and self-reported adult romantic relationship quality (Waves 7 & 8) among individuals with low quality initial romantic relationships (positive and negative) per median split.

Table 9. Results from multilevel models with interview data only.

	Positive	Negative
<b><u>Internalizing</u></b>		
Intercept ( $\beta_0$ )	-1.10(.07)***	0.05(.07)
Initial Quality ( $\beta_1$ )	0.19(.12)	0.13(.10)
Internalizing ( $\beta_2$ )	-0.08(.07)	-0.04(.06)
Gender ( $\gamma_{01}$ )	0.02(.17)	-0.07(.18)
<b><u>Externalizing</u></b>		
Intercept ( $\beta_0$ )	-1.10(.07)***	0.05(.07)
Initial Quality ( $\beta_1$ )	0.17(.13)	0.13(.10)
Externalizing ( $\beta_2$ )	-0.04(.10)	-0.03(.07)
Gender ( $\gamma_{01}$ )	-0.04(.17)	-0.10(.17)
<b><u>Substance Use</u></b>		
Intercept ( $\beta_0$ )	-1.10(.07)***	0.05(.07)
Initial Quality ( $\beta_1$ )	0.22(.14)	0.12(.09)
Substance Use ( $\beta_2$ )	0.04(.14)	-0.01(.12)
Gender ( $\gamma_{01}$ )	-0.03(.19)	-0.08(.17)
<b><u>Self-Esteem</u></b>		
Intercept ( $\beta_0$ )	-1.10(.07)***	0.05(.07)
Initial Quality ( $\beta_1$ )	0.21(.12)	0.12(.10)
Self-Esteem ( $\beta_2$ )	-0.06(.09)	-0.06(.07)
Gender ( $\gamma_{01}$ )	-0.04(.17)	-0.08(.17)

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ .

Note: These models test the associations between adjustment at the time of the first romantic relationship and interview rated adult romantic relationship quality (Waves 7 & 8) among individuals with low quality initial romantic relationships (positive and negative) per median split.

*Table 10.* Means and standard deviations of standardized positive and negative indicators of romantic relationship quality across Waves 1 through 8.

	Positive Quality Indicators	Negative Quality Indicators
Wave 1	-0.39(.92)	-0.24(.95)
Wave 2	-0.11(.85)	-0.15(.85)
Wave 3	-0.18(.84)	0.01(1.15)
Wave 4	-0.07(.85)	-0.09(1.04)
Wave 5	-0.03(.83)	0.14(1.11)
Wave 6	0.13(.82)	0.13(.97)
Wave 7	0.24(.84)	0.11(.87)
Wave 8	0.40(.84)	0.06(.98)