

Perceptions of Parent-Child Attachment Relationships and Friendship Qualities: Predictors of Romantic Relationship Involvement and Quality in Adolescence

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Abstract Relationships with parents and friends are important contexts for developing romantic relationship skills. Parents and friends may influence both the timing of involvement and the quality of romantic relationships. Three models of the joint influence of parents and friends (*direct effects model*, *mediation model*, and *moderator model*) have been proposed. The present study uses data from a longitudinal study ($n = 1012$; 49.8% female; 81.1% Caucasian) to examine how attachment and friendship quality at age 10 years predict romantic relationship involvement and quality at ages 12 and 15 years. The results supported the direct effects model, with attachment and friendship quality uniquely predicting different romantic relationship outcomes. The findings provide further support for the important influence of family and friends on early romantic relationships.

Keywords Attachment · Friendship · Romantic relationships · Adolescence · Parent-child relationships

Introduction

Romantic relationships can play a significant role in the lives of American adolescents. With 20–25% of 12 year olds and 44–50% of 15 year olds reporting involvement in

romantic relationships either currently or in the past (Carver et al. 2003; Lenhart et al. 2015), it is clear that these relationships are not the myth they once seemed to be (Collins 2003). The importance of studying adolescent romantic relationships is highlighted further by evidence that early romantic involvement is associated with increased internalizing and externalizing symptoms, poorer behavioral adjustment, and reduced well-being (Zimmer-Gembeck et al. 2001). The quality of adolescents' romantic relationships has also been emphasized as a predictor of adjustment, with high quality romantic relationships related to decreased externalizing symptoms, increased relationship satisfaction, and more positive overall adjustment (Collibee and Furman 2015). Romantic relationship quality is more strongly related to adjustment in mid-adolescence and late adolescence, when romantic relationships become more developmentally salient, than it is in early adolescence (Collibee and Furman 2015).

Given the connections between romantic relationship variables and adjustment, recent work has shifted toward understanding the factors that predict romantic relationship involvement and quality. A significant conclusion is that adolescents' relationships with parents and friends have an effect on their romantic relationship involvement and quality (Connolly and McIsaac 2011). For example, it has been shown that adolescents who have high quality relationships with their parents and friends are more likely to have higher quality romantic relationships (Roisman et al. 2009). To date, however, most studies have investigated the influence of parents and friends separately, or have neglected to consider the antecedents of romantic relationships using longitudinal research designs. Furthermore, studies and reviews that do consider these issues (e.g., Collins 2003; Connolly and McIsaac 2011; Roisman et al. 2009) draw conflicting conclusions as to the exact

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mechanisms and pathways of influence between parents, friends, and romantic relationship involvement and quality. In addition, these questions have mostly been investigated in older adolescents, with few studies exploring predictors of *early* romantic relationship experiences. Even if early romantic relationships are less salient and intimate than later ones, they are important to study given the evidence that early involvement in romantic relationships is linked to poorer adjustment (Zimmer-Gembeck et al. 2001), and early experiences in romantic relationships may lay a foundation for romantic relationships that develop later in adolescence. The present study seeks to address these limitations and especially to understand predictors of early adolescent romantic relationships. Specifically, we examine three different models of how prior experiences in childhood attachment relationships and in close friendships influence romantic relationship involvement and quality in early and mid-adolescence (ages 12–15 years).

How is Parent-Child Attachment Related to Romantic Relationships?

The parent-child relationship is a critical relationship that has been shown to be foundational for many components of development. One influential perspective, attachment theory (Bowlby 1982; Ainsworth 1989), proposes that children form an enduring emotional bond to an attachment figure, which is supported by a behavioral system (Bowlby 1982). In early childhood, this system is designed to promote proximity to a safe haven, the attachment figure, in times of danger or distress, as well as support exploration away from the attachment figure, or secure base (Ainsworth 1989). A child is said to have a secure attachment if they believe they can rely on their caregiver as both a safe haven and a secure base. As children get older, the behaviors that reflect secure attachments evolve and the set goal of the attachment system shifts from proximity to availability of the attachment figure (see Kerns and Brumariu 2016). Nevertheless, parents remain an important (and typically primary) attachment figure well into adolescence, and even early adulthood (Rosenthal and Kobak 2010).

Children who are securely attached are expected to have positive expectations concerning relationships with others, a sense of self-worth and self-esteem, and the skills to self-regulate emotion that are required for interacting competently in later relationships (Cassidy 2001; Sroufe et al. 1999). Furthermore, they have a better understanding of the reciprocity and pattern of giving and receiving of affective exchange in relationships, which prepares them to be more empathic (Sroufe et al. 1999). Consistent with these hypotheses, meta-analyses show that attachment is related to children's later friendship qualities and competence with their peers (Groh et al. 2014; Pallini et al. 2014).

Parent-child attachment has also been theorized to influence romantic relationship involvement (see Connolly and McIsaac 2011). In keeping with the idea that early involvement can be considered an index of risk, it may be that those who are more securely attached would be less likely to be involved in romantic relationships in early adolescence. The transition into adolescence is often a transformational time for parent-child relationships. It is possible that because of their history of a trustworthy and stable relationships with parents, securely attached adolescents are better prepared to cope with this transformation, and thus are less tempted to gravitate toward early romantic involvement to fulfill their need for intimacy because this need is fulfilled in their relationships with their parents (Fuligni and Eccles 1993). Securely attached adolescents are also more likely to be monitored by their parents and to check in with their parents and voluntarily let them know what they are doing (Kerns et al. 2001). It may be that these behaviors would decrease the likelihood of securely attached adolescents engaging in behaviors, such as early romantic involvement, that have been associated with risk. In addition, securely attached children might be more likely to follow peer group norms. One of the most important norms in middle childhood and early adolescence is gender boundary maintenance, which is the idea that one should only interact and hangout with those of the same gender (Sroufe et al. 1993). Since securely attached children are more prone to understanding and following peer group norms, and have been found to maintain gender boundaries in early adolescence (Sroufe et al. 1993), they may also be less likely to be involved in romantic relationships at this developmental period.

Despite these speculations, empirical evidence for an association between attachment and romantic involvement is scarce for early adolescents, and for older adolescents is inconclusive. For example, studies of attachment and romantic involvement in late adolescence, when romantic involvement is more common, show securely attached adolescents are more likely to be in romantic relationships (Simpson 1990), but studies of high school youth do not. Furman and Winkles (2010) found no connection between 10th grade adolescents' attachment styles with their parents and their romantic relationship involvement, and Kobak et al. (2012) also did not find an association between parent-child attachment and romantic involvement at ages 15 and 17 years. It may be that parents are not the primary source of influence on romantic involvement until later in emerging adulthood when romantic relationships become more stable and longer lasting (Connolly and McIsaac 2011). Yet it is still surprising that there is such limited empirical work on the topic, especially given that early adolescent involvement in romantic relationships is well documented (Lenhart et al. 2015) and has been associated as a risk factor that relates to

increasing problem behaviors, emotional distress, delinquency, alcohol use, and sexual activity (Davies and Windle 2000).

For those adolescents who do form romantic relationships, parent-child attachment may influence the quality of their romantic relationships. Buhrmester and Furman (1987) emphasized that companionship and intimacy are two important qualities that children seek in relationships, first from parents, then peers, and finally from romantic partners. Collins and Sroufe (1999) propose that securely attached children will experience intimacy in romantic relationships because they value and can share closeness, intense emotion, and concern for others' well-being as these have been modeled and learned in secure attachment relationships. Similarly, Cassidy (2001) theorized that securely attached individuals expect and experience positive romantic relationship qualities such as intimacy because they were consistently and sensitively responded to as children when they turned to their parents for care. It is possible that associations between attachment and romantic relationship intimacy may be attenuated in early adolescence, given that romantic relationships at this age may be based more on companionship than intimacy (Connolly and McIsaac 2011). Kerns (1994) suggested that secure attachment would promote companionship in friendship in early adolescence, and it may promote companionship with a romantic partner as well. Surprisingly, even though there is substantial empirical evidence for a link between attachment and intimacy in studies of older adolescents (Connolly and McIsaac 2011), to our knowledge no studies have examined the connection between parent-child attachment and romantic relationship quality in early and mid-adolescence (i.e., under the age of 15 years).

How Do Friendships Relate to Romantic Relationships?

Along with emphasizing the importance of the parent-child bond on later romantic relationships, it is also critical to consider the influence that peers, and more specifically, close friends, have on adolescents' romantic relationship involvement and quality. Within friendships, individuals learn notions of openness, trust, intimacy, and conflict resolution (Connolly and McIsaac 2011), all of which might be critical for the development and maintenance of successful romantic relationships. In middle childhood and early adolescence, gender boundary maintenance is an important peer group norm that discourages interactions with the opposite gender. By mid-adolescence, adolescents become more interested in romance and show increased interactions with the opposite gender (Connolly and McIsaac 2011). Some adolescents do not follow this normative pathway, and friends may play a role in influencing when

adolescents begin to form romantic relationships as well as the quality of those relationships.

Research has shown that close friendships do influence both romantic relationship involvement and quality. One of the major developmental tasks of adolescence is to form close, lasting friendships (Bukowski et al. 2009). During this time, the capacity for intimacy develops (Collins and Sroufe 1999). Furthermore, adolescents learn emotional vulnerability, and how to navigate conflict, with intimate agemates (Sroufe et al. 1999). Indeed, empirical work has shown that romantic involvement in mid-adolescence can be predicted by higher friendship quality (Zimmer-Gembeck et al. 2004). Additionally, adolescents who competently navigate these lessons and form close lasting friendships have been shown to have higher quality relationships with romantic partners (Roisman et al. 2009; Boisvert and Poulin 2016), although this work largely focuses on older adolescents. Unfortunately, not all adolescents navigate friendship successfully, and those who fail to learn the lessons taught by close friendships have also been shown to be at risk for early-starting, or off-timed romantic relationship involvement (Vitaro et al. 2009). Individuals with unsuccessful friendships may seek early involvement in romantic relationships because romantic partners can potentially provide support, comfort, and companionship that is lacking in their friendships (Furman and Wehner 1997).

Models of Relationship Influence

From a developmental psychopathology perspective, it is important to not only investigate the direct influences of parents and friends, but also the mechanisms and pathways of influence over time (Rutter and Sroufe 2000). Although most research has investigated how either attachment or friendship predicts romantic relationships, some studies do consider their joint effects. Three different models of parents' and friends' influence on romantic relationship outcomes have been proposed: a direct effects model, a mediation model, and a moderator model. Proponents of the *direct effects model* (Roisman et al. 2009; Boisvert and Poulin 2016) have highlighted that adolescents learn different lessons from parents and peers, and thus parents' and peers' influences may not overlap. The direct effects model predicts that parent-child attachment and friendship quality may each independently influence romantic relationship outcomes. Although not studies of friendship quality specifically, two studies of adolescents suggest that parent-child and peer relationships may uniquely influence romantic relationships. Boisvert and Poulin (2016) provided evidence for the direct effects model as they found that those who were intensely involved in long-term romantic relationships, characterized by many romantic partners and

a high number of years involved in romantic relationships between ages 16 and 24 years, were more likely to be well-liked by peers but experience frequent conflict in their relationships with parents at age 12 years. Furthermore, Roisman et al. (2009) found that earlier maternal sensitivity and peer competence, which were both measured repeatedly in early and middle childhood, were each positively and independently related to the quality of adolescents' relationship quality at age 15 years.

Those who support a *mediation model* (Carlson et al. 2004; Simpson et al. 2011; Collins and van Dulmen 2015) propose that parent-child relationships are a context in which skills develop that will influence individuals' friendship quality and interactions with peers, which will in turn influence romantic relationships. This model would be supported by evidence that the relation between parent-child attachment and romantic relationships is explained by an indirect effect through friendship quality. Carlson et al. (2004) provide evidence for this model. Specifically, they found that the quality of parent-child attachment relationships at 12–18 months was related to experiences in the peer group at ages 8 and 12 years, which in turn was related to romantic relationship outcomes at age 19 years. Still others have proposed a *moderator model* in which positive friendship quality buffers the impact of a low-quality parent-child relationship on developmental outcomes (Rubin et al. 2011). To our knowledge, no empirical work on romantic relationships has been done to evaluate the moderator model.

The Current Study

The current study investigates the three models of parents' and friends' influence on romantic relationship involvement and quality at both age 12 years and age 15 years. We used the National Institute of Child Health and Human Development (NICHD) Study of Early Child Care and Youth Development (SECCYD) dataset to examine how experiences in childhood attachment relationships and in close friendships (age 10 years) predict romantic relationship involvement and quality in early adolescence (ages 12 and 15 years).

We predicted that secure attachment and higher quality friendships would predict less romantic relationship involvement at age 12 years because, at this age, involvement is considered off-timed (i.e. violates peer group norms), early, and an index of risk, and therefore might more often be pursued by adolescents whose needs for closeness and companionship are not being met in parent-child relationships or friendship. We did not make specific predictions for involvement at age 15 years, as it is more common to be involved in romantic relationships at this age and thus more

difficult to anticipate the characteristics of those who would or would not be involved.

Although we thought high quality relationships with parents and friends would be linked to less involvement in romantic relationships, we nevertheless expected that participation in high quality relationships with these social partners would provide healthy relationship expectations and social skills that could potentially transfer to adolescents' interactions with romantic partners. We therefore predicted that higher romantic relationship quality (greater companionship and intimacy, fewer negative interactions) at both ages 12 and 15 years would be associated with secure attachment and higher quality friendships. Further, given that the salience and importance of romantic relationships increases across adolescence, we speculated that associations of romantic relationship quality with attachment and friendship quality might be stronger at age 15 years than at 12 years.

Finally, to better understand the joint influence of attachment and friendship on later romantic relationship quality, we tested the direct effects model (attachment and friendship independently predict), the mediation model (attachment influences romantic relationships through its influence on friendship experiences), and the moderator model (higher quality friendship can buffer the effects of insecure attachment on romantic relationship experiences). The models are not competing in that it would be possible to find support for more than one model (e.g., attachment and friendship both predict romantic relationship quality, but the effect for attachment is partially mediated by friendship quality). We did not make specific predictions as to which model would be most strongly supported, as all three are viable possibilities.

Method

Participants

The sample was drawn from the NICHD SECCYD data set, a longitudinal study of 1364 children and their families recruited in infancy and followed through age 15 years, see study website for details of study recruitment and data collection. Institutional review boards approved data collection at each of the 10 study sites across the United States, and informed consent was obtained from all individual participants included in the study. At age 12 years, 1012 participants (50.2% male, 81.1% Caucasian) provided information on involvement in romantic relationships, with 192 participants (63% male, 71.9% Caucasian) reporting involvement and 182 participants providing ratings of romantic relationship quality. At age 15 years, 954 participants (50% male, 81.4% Caucasian) provided

involvement data, with 213 participants (45.5% male, 73.2% Caucasian) reporting involvement in a romantic relationship and 206 participants providing ratings of romantic relationship quality.

Procedure

The present study included data collected during phase 3 (second through sixth grades) and phase 4 (age 15 years, ninth grade) of the study. Relevant to this study, during fifth grade (around age 10 years), data were collected from children about their attachment to their mothers and about the quality of their friendships. During sixth grade, around 12 years of age, and at age 15 years, adolescents filled out questionnaires about their involvement in romantic relationships, and answered questions about the quality of those relationships if they were involved.

Measures

Mother-child attachment

The Security in Relationship (Mother) questionnaire was developed from the Kerns et al. (2001) Security Scale and the Relatedness Questionnaire (Lynch and Cicchetti 1997). This questionnaire, filled out by the child about the relationship with their mother during fifth grade, assessed the child's perceptions of the mother's availability and responsiveness and the child's willingness to seek comfort from the mother when distressed. The scale of attachment security we used had 16 items, 13 taken from the Kerns Security scale, and an additional 3 items from the Relatedness Questionnaire (see Kerns et al. 2011, for scale development). Scores on each item ranged from 1 to 4, with higher numbers indicating more security in the relationship as perceived by the child. Sample items include "It's easy to count on my mom for help" and "I go to my mom when I'm upset". This 16-item scale had adequate internal consistency (Cronbach's $\alpha = .83$). The Security Scale has been established to demonstrate good internal validity and reliability (Kerns et al. 2005), and the version used in the present study has been shown to predict parenting and child anxiety (Kerns et al. 2011).¹

¹ Although adolescents also filled out a father version of the attachment measure at age 10 years, we do not include this measure in our main analyses because mother and father attachment security were highly correlated ($r = .73$) and thus putting them together in a regression analysis would be problematic. Furthermore, due to missing data for father-child attachment, the number of participants involved in a romantic relationship at ages 12 and 15 years decreased by almost 40 participants, which reduced power substantially. For descriptive purposes, we do provide information about results for father-child attachment in later footnotes.

Friendship quality

The Friendship Quality Questionnaire (Parker and Asher 1993), completed by children at age 10 years, had 21 items with six subscales. We selected three subscales most relevant to the specific features of friendship that are thought to influence romantic relationship outcomes (Buhrmester and Furman 1987; Sroufe et al. 1999): *Companionship and recreation* ($n = 2$; e.g., always sit together at lunch), *intimate disclosure* ($n = 3$; tell each other private things a lot), and *conflict and betrayal* ($n = 4$; get mad at each other a lot). Items were rated on a 5-point Likert-type scale, 1 = Not at all true, 2 = A little true, 3 = Somewhat true, 4 = Mostly true, 5 = Really true. Both the intimate disclosure subscale and conflict and betrayal subscale had acceptable internal consistency ($\alpha = .79$, and $\alpha = .76$, respectively), whereas the companionship and recreation subscale had somewhat lower internal consistency ($\alpha = .60$). For validity information, see Parker and Asher (1993).

Romantic relationship involvement and quality (age 12)

Involvement was measured using one yes or no question that asked the adolescent "Do you have a special romantic relationship with anyone?". If the adolescent answered "yes", they answered the "Love is in the air"/Network of Relationships Inventory (NRI) developed by Furman and Buhrmester (1985) which consists of 30 items that measure relationship quality. We selected scales that assessed the three qualities that were parallel to those selected for friendship quality: *Companionship* ($n = 3$; e.g., How often do you go places and do enjoyable things with this person), *intimacy* ($n = 3$; e.g., How much do you share secrets and private feelings with this person), *negative interactions* (two subscales: conflict, $n = 3$; How much do you and this person get upset with or mad at each other?), and antagonism with romantic partner ($n = 3$; e.g., How much do you and this person get annoyed with each other's behavior?). Items were rated on a 5-point Likert-type scale, 1 = Little or none, 2 = Somewhat, 3 = A lot, 4 = A whole lot, and 5 = "the most!". All subscales had acceptable internal consistency; the companionship subscale ($\alpha = .77$), the intimacy subscale ($\alpha = .87$), and the negative interactions subscale ($\alpha = .81$). The NRI has been established to demonstrate good validity and reliability (Furman 1996; see also Furman and Buhrmester 2009).

Romantic relationship involvement and quality (age 15 years)

The Romantic Relationship Questionnaire/Network of Relationships Inventory used at age 15 years partially overlapped with the version used at age 12 years. Adolescents were asked, "Are you in a romantic relationship right now?", and if

they answered “Yes, I’m in a romantic relationship right now” or “Yes, I’m in more than one romantic relationship right now” they filled out items about romantic relationship quality. The same subscales used at age 12 years were used again to measure romantic relationship quality. For this age group, companionship had a somewhat low internal consistency ($\alpha = .61$), whereas intimacy ($\alpha = .87$) and negative interactions ($\alpha = .93$) had high internal consistencies.

Pubertal development

Beginning at age 9.5, health and physical development assessments for children were conducted each year. Because we were interested in testing whether early entrance to puberty is a risk factor for early involvement, we included the puberty assessments that were collected in Grade 5. The child’s Tanner stage (Tanner 1962) was evaluated by pediatric nurses or pediatric endocrinologists during each of these assessments. Specifically, the Tanner stage for males assesses the development of genitalia and pubic hair, and the Tanner stage for girls assesses the development of breasts and pubic hair, using stages 1 (prepuberty) through 5 (full development). Previous research has demonstrated that this measure has adequate reliability and validity (Deardorff et al. 2007). In the current study, the pubertal development variable had a mean of 1.52 ($SD = .55$). Thus, on average, children were in the beginning stages of pubertal development, and therefore higher scores indicate children who are entering puberty early.

Results

Analytic Plan

Data were analyzed in four steps. We begin with preliminary analyses of associations between demographic variables (gender, family income/needs ratio, pubertal development) and romantic relationship variables. Next, mother-child attachment and friendship quality variables are examined as predictors of involvement at ages 12 and 15 years, using both correlational and logistic regression data to display the results. Then, a series of linear regressions follow to examine mother-child attachment and friendship qualities as predictors of romantic relationship qualities at ages 12 and 15 years. Finally, mediation and moderation analyses were run to test the mediation and moderator models for predicting relationship quality.

Preliminary analyses: Demographic variables

An independent samples t-test for comparisons by *child gender* (boys, girls) revealed that gender was significantly

related to involvement in romantic relationships at age 12 years ($t(974.09) = 3.98, p < .001$; boys, $M = .24, SD = .43$; girls, $M = .14, SD = .35$) but not age 15 years. *Income/needs ratio* at age 10 years was significantly negatively related to involvement at both age 12 years and age 15 years ($r(961) = -.10, p = .002$; and $r(909) = -.15, p < .001$, respectively) as well as to negative interactions in romantic relationships at age 12 years, ($r(180) = -.28, p < .001$). Correlation analyses reveal that *pubertal development* at age 10 years was significantly related to involvement at both age 12 years and age 15 years, such that those who were further developed were more likely to be involved in romantic relationships ($r(881) = .08, p = .02$; and $r(841) = .10, p = .01$, respectively). Pubertal development at age 10 years was also significantly and positively related to both intimate disclosure in friendships at age 10 years, ($r(877) = .20, p < .001$) and to negative interactions in romantic relationships at age 15 years, ($r(193) = .21, p = .003$). Given these findings, we controlled for gender, family income, and pubertal development in regression analyses predicting romantic relationship involvement and quality.

Direct Effects Model: Do Attachment Security and Friendship Quality Each Directly Predict Romantic Relationship Involvement at Ages 12 and 15 Years?

We found that 18.4% of adolescents were involved in romantic relationships at age 12 years and 22.7% at age 15 years. A logistic regression analysis was conducted to predict romantic relationship involvement at age 12 years using mother-child attachment and companionship, intimate disclosure, and conflict in friendship as predictors, while controlling for the effects of gender, income, and pubertal development. The model was statistically significant, indicating that the predictors reliably distinguished between those who were involved in a romantic relationship and those who were not ($\chi^2 = 49.76, p < .001, df = 7$). The model explained 9.5% of the variance in romantic relationship involvement, and prediction success overall was 81.6% (99.6% for not involved in a relationship and 2.0% for involved in a relationship). The Wald statistic indicated that mother-child attachment made a significant and unique contribution to the prediction of involvement, with those who were more securely attached less likely to be involved in a romantic relationship ($M_{Involved} = 3.28$ and $M_{NotInvolved} = 3.43, p < .01$).² The Wald statistic also indicated that intimate disclosure in friendship at age 10 years made a significant and unique contribution to the prediction of

² T-tests revealed that father-child attachment also was related to romantic relationship involvement at age 12 years, with those who were more securely attached less likely to be involved in a romantic relationship ($M_{Involved} = 3.37$ and $M_{NotInvolved} = 3.16, p < .001$).

Table 1 Correlation matrix for mother-child attachment friendship qualities and romantic relationship involvement and quality

	Age 10 years Attachment and friendship				Age 12 years Romantic relationships			Age 15 years Romantic relationships		
	A	C	I	N	C	I	N	C	I	N
Mother-child attachment security	1	.15***	.17***	-.19***	.07	.11	-.13	.07	-.06	-.06
Companionship with friend		1	.40***	-.11***	.08	.11	.17*	.08	.18*	-.03
Intimate disclosure with friend			1	-.13***	.17*	.19**	.14	.25***	.22**	.05
Negative interactions with friend				1	-.02	.01	.11	-.16*	-.14	.13

Note: A attachment, C companionship, I intimacy, N negative interactions

* $p < .05$, ** $p < .01$, *** $p < .001$

involvement, with those who reported more intimate disclosure more likely to be involved in a romantic relationship ($M_{Involved} = 3.80$ and $M_{NotInvolved} = 3.67$) ($p = .001$). The odds ratio indicated that for every one-unit increase in mother-child attachment security, the likelihood of being involved in a romantic relationship decreased by .53. The odds ratio for intimate disclosure in friendship indicates that for every one-unit increase in intimacy, the likelihood of being involved in a romantic relationship increases by 1.41.

An analogous logistic regression at age 15 years was also statistically significant, ($\chi^2 = 37.02$, $p < .001$, $df = 7$). The model explained 6.9% of the variance in romantic relationship involvement, and prediction success overall was 77.4 (99.7% for not involved in a relationship and 1.7% for involved in a relationship). In contrast to the findings at age 12 years, mother-child attachment was not uniquely related to involvement in romantic relationships at age 15 years.³ Instead, the Wald statistic indicated that companionship in friendship made a significant and unique contribution to the prediction of involvement, with those who reported more companionship in friendship at age 10 years less likely to be involved in a romantic relationship at age 15 years ($M_{Involved} = 4.32$ and $M_{NotInvolved} = 4.36$) ($p = .04$). More intimate disclosure in friendship at age 10 years predicted greater likelihood of involvement at age 15 years ($M_{Involved} = 3.85$ and $M_{NotInvolved} = 3.66$) ($p = .006$). The odds ratio for companionship at age 10 years indicates that for every one-unit increase in companionship, the likelihood of being involved in a romantic relationship decreases by .79. The odds ratio for intimate disclosure in friendship indicates that

for every one-unit increase in intimate disclosure, the likelihood of being involved in a romantic relationship increases by 1.32.

Direct Effects Model: Do Attachment Security and Friendship Quality Each Directly and Independently Predict Romantic Relationship Quality at Ages 12 and 15 Years?

For descriptive purposes, Pearson product-moment correlation coefficients were computed to assess the relationship between attachment security, friendship quality variables, and romantic relationship quality variables. The correlations showed that mother-child attachment security was correlated with every friendship quality variable, but not with romantic relationship quality.⁴ Additionally, companionship, intimate disclosure, and conflict in friendship relate to various romantic relationship quality outcomes at both ages 12 and 15 years (see Table 1).⁵

Linear regression analyses (see Table 2) explored the joint and unique relations of attachment and the friendship quality variables with each of the romantic relationship quality variables, while controlling for gender, income, and pubertal development. Mother-child attachment did not predict companionship, intimacy or negative interactions in romantic relationships at ages 12 or 15 years. Thus, it appears there was not a direct path of influence between mother-child attachment and romantic relationship quality. Friendship quality did show some direct effects (see Table 2). Intimate disclosure in friendship at age 10 years

³ Although the logistic regression analyses did not find that mother-child attachment was a unique predictor of involvement after controlling for other variables, T-tests revealed that both mother-child attachment and father-child attachment were related to romantic relationship involvement at age 15 years. Those who were more securely attached were less likely to be involved in romantic relationships at age 15 years ($M_{Involved} = 3.33$ and $M_{NotInvolved} = 3.42$, $t(923) = 2.48$, $p < .05$; $M_{Involved} = 3.22$ and $M_{NotInvolved} = 3.37$, $t(772) = 3.26$, $p < .01$, for mothers and fathers, respectively). Due to our interest in understanding the unique effects of each predictor, we did not interpret these effects but do provide them for descriptive purposes.

⁴ Father-child attachment security also correlated significantly with every friendship quality variable (companionship, $r = .13$, intimacy, $r = .11$, negative interactions, $r = -.20$). In addition, father-child attachment was related to less negative interactions in romantic relationships at age 12 years ($r = -.19$), whereas mother-child attachment security was marginally related to less negative interactions in romantic relationships at age 12 years ($r = -.13$).

⁵ To test whether associations between attachment or friendship with romantic relationship qualities differed for boys and girls, we split our data by gender and re-ran the correlations. Of the 30 correlations, only one was significantly different, and given this was less than what is expected by chance we did not interpret this effect.

Table 2 Linear regressions predicting romantic relationship quality from mother-child attachment and friendship qualities

	Age 12 years			Age 15 years		
	Romantic relationship qualities			Romantic relationship qualities		
	Companionship	Intimacy	Negative interactions	Companionship	Intimacy	Negative interactions
Model I	(N = 171)			(N = 194)		
Gender	.15	.12	.04	.14	.07	-.02
Income to needs ratio	-.21*	-.12	-.26**	.003	-.01	-.07
Pubertal development	-.24*	-.11	.08	-.05	.13	.25**
Model R ²	.07*	.03	.09**	.02	.03	.07**
Model II	(N = 171)			(N = 194)		
Gender	.13	.08	-.02	.07	.04	-.04
Income to needs ratio	-.23**	-.13	-.23**	.004	-.01	-.06
Pubertal development	-.25**	-.12	.09	-.09	.09	.23**
Mother-child attachment security	.10	.11	-.06	.01	-.06	.05
Companionship with friends	-.04	.01	.15	-.04	.11	-.06
Intimacy with friends	.19*	.18	.06	.29**	.15	.07
Conflict with friends	-.08	.02	.10	-.18*	-.14	.09
Model R ²	.13**	.07	.13**	.12**	.11**	.08*

Note: Coefficients are standardized betas

* $p < .05$, ** $p < .01$

was uniquely predictive of greater companionship in romantic relationships at ages 12 and 15 years. Conflict in friendship at age 10 years was also predictive of less companionship in romantic relationships at age 15 years. None of the friendship variables uniquely predicted intimacy in romantic relationships or negative interactions in romantic relationships at ages 12 and 15 years, although there were some marginally significant findings ($ps < .08$) for intimacy in romantic relationships. Specifically, intimate disclosure in friendship was associated with greater intimacy in romantic relationships at ages 12 and 15 years. Additionally, conflict in friendship was associated with greater intimacy in romantic relationships at age 15 years.

Mediation Model: Does Attachment Security Have an Indirect Influence on Adolescents' Romantic Relationship Qualities through Friendship Quality at Ages 12 and 15 Years?

Because mother-child attachment was related to each of the friendship qualities, and because friendship quality was related to certain romantic relationship qualities, it is possible mother-child attachment could still be related to romantic relationship quality through an indirect path. Mediation analyses were conducted at ages 12 and 15 years for those cases where friendship quality uniquely predicted romantic relationship quality. A bootstrapping approach (Preacher and Hayes 2008) was utilized to evaluate indirect effects as it is appropriate to use with small sample sizes and

does not make any assumptions about the distribution of the indirect effect (Preacher and Hayes 2008). We conducted two analyses in SPSS using the PROCESS macro for multiple mediation (Preacher and Hayes 2008), one at age 12 years for companionship in romantic relationships, and one at age 15 years, also for companionship in romantic relationships. In each analysis, all mediators (friendship quality variables) were included and the specific indirect effects for each friendship variable were examined. As recommended by Preacher and Hayes (2008), 5000 resamples were generated. The bootstrapping approach uses the 95% confidence interval (CI) as evidence for mediation. If the interval does not include zero, then there is likely a significant mediation occurring (see Preacher and Hayes 2008). Gender, income to needs ratio, and pubertal development were controlled for in analyses.

The multiple mediation analysis at age 12 years, investigating a possible indirect path between mother-child attachment and companionship in romantic relationships, was not significant, as the 95% CI for the indirect effect contained zero ($-.19$ to $.71$). At age 15 years, the multiple mediation test was also not significant for the test of an indirect path between mother-child attachment and companionship in romantic relationships, as the 95% CIs for the indirect effect ($-.03$ to $.49$). Thus, the friendship quality variables of companionship, intimate disclosure, and conflict did not mediate the relation between mother-child attachment and companionship in romantic relationships at either age 12 years or age 15 years.

Moderation Model: Do Positive Friendship Qualities Buffer the Influence of an Insecure Attachment Relationship on Romantic Relationship Qualities at Ages 12 and 15 Years?

We tested whether companionship or intimate disclosure would buffer the impact of a more insecure mother-child attachment relationship on romantic relationship quality. To conduct these analyses, the PROCESS macro for SPSS was used to probe for interactions in linear models (Hayes 2012). The PROCESS macro uses the Johnson-Neyman technique to indicate the point or points along the continuum of the moderator where the effect of the predictor transitions between significant and not significant. This method has been shown to be preferable to the “pick-a-point” approach, which has been shown to have the potential for arbitrariness (see Hayes 2012). Twelve analyses were conducted in total, six for the age 12 years romantic relationship data, and six for the age 15 years romantic relationship data, with companionship and intimate disclosure in friendship analyzed individually as moderators with each of the three romantic relationship quality outcomes: companionship, intimacy, and negative interactions. Gender, income, and pubertal development were controlled for in the analyses. Of the six moderations conducted for romantic relationships at age 12 years, none of the interaction terms were statistically significant. Furthermore, none of the interaction terms for the six moderations with the age 15 years data were statistically significant. These findings, suggest that positive friendship qualities did not buffer the impact of a more insecure mother-child attachment relationship on romantic relationships at either age.

Discussion

Romantic relationship research has shown the importance of relationships with parents or peers as contexts of influence for adolescent romantic relationship involvement and quality for older adolescents (Roisman et al. 2009; Collins and van Dulmen 2015; Boisvert and Poulin 2016). Using a longitudinal design, we compared three potential models of joint influence of parent-child attachment and friendship as predictors of early romantic relationships (direct effects model, mediation model and moderator model). Our findings were consistent with a direct effects model, and showed that mother-child attachment security predicted romantic relationship involvement, whereas friendship quality predicted both romantic involvement and romantic relationship quality. Despite the longer time span, estimates of effect size suggest that friendship at age 10 years was

more strongly related to romantic relationship quality at age 15 years than at age 12 years.

Romantic Relationship Involvement at Ages 12 and 15 Years

Adolescents in our sample reported relatively low rates of involvement in romantic relationships (18% at age 12 years, 22% at age 15 years) compared to national estimates (see Lenhart et al. 2015), although this could be due to the fact that data were only collected in reference to current (as opposed to recent) romantic relationships. As predicted, we found that adolescents who were involved in a romantic relationship at age 12 years were less securely attached to their mothers. At age 15 years, after controlling for gender, income, and pubertal development, mother-child attachment did not uniquely predict romantic relationship involvement. These findings challenge the assumption that those who are insecurely attached should be less likely to get involved in romantic relationships due to a discomfort with getting close to others, or a fear that their romantic partner would not really love them (Simpson 1990). It instead suggests that, at least in early adolescence, insecurely attached adolescents are more likely to seek out romantic relationships at an early age as a way to compensate for a lack of closeness in parent-child attachments, as proposed by Furman and Wehner (1997). Thus, secure attachment may operate as a protective factor against involvement in early romantic relationships, which in turn has been linked to negative outcomes such as poor adjustment (Zimmer-Gembeck et al. 2001).

Friendship quality at age 10 years also predicted subsequent involvement in romantic relationships. Interestingly, adolescents who reported more intimacy in their friendships were also more likely to be involved in a romantic relationship at both age 12 and 15 years, whereas those who reported more companionship in friendship were less likely to be involved in romantic relationships at ages 15 years. The findings for companionship suggest that adolescents who spend more time with close friends may feel less of a need to establish a romantic relationship. The findings for friendship intimacy are subject to different interpretations. On the one hand, developing intimate relationships with friends could foster a greater capacity to form close relationships with other peers, including romantic partners. Alternatively, greater intimacy in friendship has sometimes been linked to less adaptive behaviors, such as rumination (Rose et al. 2007), and perhaps experiencing intimacy with friends leads to other less adaptive behaviors such as early involvement with romantic partners. Future studies are needed to understand the potential benefits and risks of intimate friendships in early adolescence, as well as

to test processes (e.g., rumination, intimacy skills) that might account for the correlates of friendship intimacy.

Romantic Relationship Quality at Ages 12 and 15 Years

Although mother-child attachment predicted romantic relationship involvement, surprisingly it was not predictive of romantic relationship quality at ages 12 or 15 years. These findings are inconsistent with the hypothesis that a more secure attachment relationship provides the foundation for higher quality relationships with peers (Sroufe et al. 1999), as well as evidence that attachment is associated with higher quality of other close peer relationships, specifically friendship (Groh et al. 2014; Pallini et al. 2014). Our study focused on early romantic relationships, and it may be that attachment is not associated with romantic relationship quality until late adolescence when romantic relationships become more intimate.

Instead, we found that friendship quality was predictive of romantic relationship quality at both ages. Adolescents who had higher levels of intimate disclosure in their friendships at age 10 years were more likely to report higher levels of companionship in romantic relationships at ages 12 and 15 years. Further, those who reported higher levels of conflict in friendship reported lower levels of companionship in romantic relationships at age 15 years. It might be that adolescents who have experienced conflict with friends are motivated to limit their involvement with romantic relationship partners as a strategy to limit opportunities for conflict. Taken together, these findings suggest that companionship is a key quality of early romantic relationships, and support conclusions that romantic relationships in early adolescence are companionable and casual rather than deeply intimate (Connolly and McIsaac 2011). Interestingly, intimacy in romantic relationships was not predicted uniquely by any of the friendships variables, although the correlations showed that children who formed more intimate friendships at age 10 years were involved in more intimate romantic relationships at ages 12 and 15 years. In some cases, effects sizes for associations between friendship and romantic relationships were larger at age 15 years, despite the larger time span from our assessment of friendship quality, which may reveal the ever-increasing importance of friends as a source of influence on romantic relationship quality. More generally, the findings for friendship quality are consistent with previous research showing that experiences in close friendships predict the experiences adolescents are likely to have in romantic relationships (Connolly and McIsaac 2011), and thus suggest that relationships with friends provide an important model for other close peer relationships.

While there was evidence of the direct influence of parents and friends on romantic relationship involvement,

and of friendship on romantic relationship quality, we did not find evidence for the mediation model. Prior empirical work has highlighted the importance of viewing peer relationships in the context of family relationship experiences, with the argument that early family relationships provide necessary lessons that allow children to practice deep and complex relationships with agemates, which, in turn, provide a foundation for romantic relationships (Carlson et al. 2004; Simpson et al. 2011). Although we did indeed find that more securely attached children were involved in higher quality friendships, we did not find that these experiences accounted for an indirect link between attachment and romantic relationships quality.

Additionally, we explored whether friendship quality would buffer the impact of a qualitatively poor mother-child attachment relationship on romantic relationship outcomes. We did not find any evidence for this moderation model. Although we did not find mediator or moderator effects, given the small number of studies examining these effects and mixed evidence for the mediator model in the larger literature, it would be important to test these models further in future studies.

Limitations and Future Directions

This study's strengths include a longitudinal design, focus on multiple sources of influence on adolescent romantic relationships, and the testing of multiple potential models. Nevertheless, certain limitations should be mentioned. First, it is important to note that our sample was extremely limited in terms of ethnicity. Given our use of a previously collected data set, this limitation was unavoidable, yet the lack of variability in ethnicity potentially limits the generalizability of our study. A second limitation of our study is that because of the design of the original data collection, which did not include simultaneous assessment of all of our relationship variables at multiple time points, we could not evaluate autoregressive effects or explore bi-directional effects. Another limitation is that we focused on attachment to mothers, given the more limited data available for fathers in the data set and the high correlation between attachment security to mothers and fathers. Future research could consider how mothers and fathers might each uniquely influence romantic relationships, as well as consider whether their influence differs for boys and girls. Additionally, while we were able to explore the influence of close friendship quality, we did not explore the influence of the adolescents' peer popularity on their romantic involvement and quality, which is another feature of peer relationships that may especially influence adolescents' involvement in romantic relationships (e.g., adolescents may initiate a romantic relationship to either maintain or enhance their status). The NICHD SECCYD only collected data on

popularity from adolescents' teachers and mothers, not from the adolescents themselves or from their peers' perspective, which would provide a more valid assessment of peer popularity. Another limitation is that while participants were asked to report on their romantic relationship involvement, their partners were not contacted to confirm the existence of this relationship, and no definition of involvement was provided. Finally, this study was based on the adolescents' perceptions of their relationships as study variables were investigated through the use of self-report questionnaires. Ideally, future studies could also obtain the partner's perception of the relationship as well as an observer's report. We do believe assessing adolescents' perceptions of romantic relationships is important to study also, as they reveal what the adolescent is taking away from their relationships, which may be particularly influential for later developmental outcomes.

Future research can expand upon our findings in several ways. First, given that the current study identified companionship and intimacy as key features of close peer relationships, future research could investigate how young adolescents define these constructs in the context of romantic relationships. It would be particularly useful to conduct an open-ended interview of adolescents ages 12–18 years to understand the activities (sexual and non-sexual) they pursue with their romantic partners, and how they define intimacy as compared to companionship, as well as to understand how their definitions of these concepts and their judgments about defining romantic relationship involvement might change over time. Second, future research should investigate the influence of popularity on romantic involvement and quality using self-report and peer-report measures, rather than mother or teacher reports. Finally, more work investigating the direct, mediation, and moderator models is needed to gain a fuller understanding of the mechanisms of influence on romantic relationships, including further work on additional factors (e.g., cognitive biases, emotion regulation processes) that might mediate or explain *why* attachment and friendship are related to early romantic relationships.

Conclusions

Longitudinal research exploring adolescent romantic relationship variables is relatively rare, especially studies of younger adolescents. Our study extended research in this area by examining the joint influence of mothers and friends on romantic relationship involvement as well as romantic relationship quality. Further, the study design allowed us to distinguish predictors of romantic relationships for early adolescence (age 12 years) and mid-adolescence (age 15 years), and to test alternative models. A key finding was that

mother-child attachment directly and uniquely influenced romantic involvement at age 12 years, but surprisingly did not predict romantic relationship quality. Early involvement in romantic relationships is viewed as a risky behavior, and thus our study suggests the formation of a secure attachment is a protective factor that may mitigate against the potential risk associated with early involvement in romantic relationships. Interestingly, intimacy in friendship also predicted early involvement in romantic relationships, which raises questions about whether intimacy in friendship in early adolescence always promotes good adjustment. We also provided further evidence for the importance of friendship for subsequent romantic relationship quality, and expanded on previous findings by distinguishing between intimacy and companionship, rather than just exploring a positive quality variable, finding that both qualities are a salient feature of both friendship and romantic relationships. Finally, this study contributes to the study of adolescent close relationships by testing different models of how attachment and friendship might be linked to later romantic relationships. The findings provide evidence for the direct and unique influences of mother-child attachment and friendship qualities on romantic relationships, although further research is needed to test alternative models.

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Author Contributions L.B.K. conceived of the study, participated in its design, performed the statistical analyses, participated in the interpretation of data, and drafted the manuscript; K.A.K. participated in the design of the study, provided consultation for the statistical analyses, participated in the interpretation of data, and helped draft the manuscript. All authors read and approved the final manuscript.

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants included in the study.

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