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Representations of romantic relationships, romantic experience, and sexual behavior in adolescence

MEREDITH C. JONES AND WYNDOL FURMAN
University of Denver

Abstract
Associations between romantic views and sexual behavior were examined in a community sample of 200 high school adolescents. This study incorporated interview and self-report measures of romantic views, assessed multiple facets of sexual behavior (frequency, rapidity, onset, and risky behavior), and examined light nongenital, heavy nongenital, and genital sexual behaviors. Avoidant romantic views were related to later onset of genital sexual behavior and less frequent sexual behavior, particularly light and heavy nongenital behaviors. Anxious views were related to more frequent sexual behavior and more risky behavior. Direct effects were found between avoidant views and light and heavy nongenital sexual frequency, and indirect effects were found between avoidant views and genital frequency, onset of heavy nongenital and genital sexual behavior.

One of Bowlby's (1969) important ideas was that individuals develop mental representations of their relationships with others. Such representations guide their behavior with others and serve as a basis for predicting and interpreting others' behavior. The aim of this study was to examine how such representations of romantic relationships are related to genital, light and heavy nongenital, and risky sexual behavior in adolescence.

Based on behavioral systems theory (Furman & Wehner, 1994), we conceptualized such representations of romantic relationships as expectations regarding intimacy and closeness with respect to the attachment, affiliative, caregiving, and sexual/reproductive systems in romantic relationships (Furman & Simon, 1999). This conceptualization resembles attachment theorists' conceptualization of attachment-related mental representations (see Mikulincer & Shaver, 2008) but incorporates representations regarding affiliation, caretaking, and sexuality, as well as attachment. Representations of these other behavioral systems were incorporated as each of the different behavioral systems are central in romantic relationships (Furman & Wehner, 1994; Hazan & Shaver, 1987); thus, we anticipated that romantic representations would incorporate experiences and interactions relevant to all behavioral systems and not solely the attachment system.

Similar to attachment theorists, we characterize individual differences in mental representations in terms of the continuous dimensions of avoidance and anxiety with regard to romantic relationships. Those who are avoidant in romantic relationships are not comfortable with intimacy and prefer self-reliance; thus, they are unlikely to turn to their partners, do not like being turned to, are not very interested in a relationship,

Meredith C. Jones and Wyndol Furman, Department of Psychology, University of Denver.

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Correspondence should be addressed to Meredith C. Jones, Department of Psychology, Frontier Hall, University of Denver, 2155 S. Race Street, Denver, CO 80208, e-mail: mjones59@du.edu.

and see sexuality as an opportunity for self-gratification. Those who are anxious regarding romantic relationships may worry about rejection and be overly dependent on others for support and esteem; they may find it difficult to feel comforted by a partner when distressed, be overly concerned about a partner's sexual satisfaction or problems (i.e., compulsive caretaking), and overly invest in relationships in a self-sacrificing manner.

As can be seen, the present behavioral systems theory conceptualization of mental representations is relatively similar to attachment theory's conceptualizations of such representations. In fact, the differences in conceptualization are not particularly pertinent to this study. We believe that the two theories would use similar theoretical arguments and make the same predictions regarding the links with sexual behavior that are examined here. Moreover, attachment researchers conducted most of the relevant research examining the links between representations and sexual behavior in adults.

Representations and sexual behavior in adulthood

Attachment researchers have shown that romantic representations are related to sexual behavior in adulthood. Adults with secure representations report fewer casual sexual partners (Brennan & Shaver, 1995). Avoidance is associated with aversive sexual feelings and cognitions and few physically intimate behaviors (Birnbaum, Mikulincer, Orpaz, Reis, & Gillath, 2006; Fraley, Davis, & Shaver, 1998). Avoidant young adults also report less frequent sexual intercourse (Bogaert & Sadava, 2002; Gentzler & Kerns, 2004). Avoidance is also associated with less frequent sexual intercourse in married and cohabiting adults (Brassard, Shaver, & Lussier, 2007). As for risky sexual behavior, adults with avoidant representations also hold more accepting attitudes toward casual sex (Feeney, Noller, & Patty, 1993), are more likely to have "hook-ups," or brief sexual encounters with relative strangers (Paul, McManus, & Hayes 2000), and have more casual sexual partners (Simpson & Gangestad, 1991). Avoidance is also associated with unrestricted sociosexuality, which refers to feeling comfortable having sex without closeness or commitment (Simpson & Gangestad, 1991). Thus, avoidance may be expressed by either engaging in little sexual behavior or engaging in it in non-initimate contexts.

According to both behavioral systems theory and attachment theory, romantically anxious individuals may see sexual behavior as a means of obtaining love but may also be concerned about being unwanted and being abandoned (Furman & Wehner, 1994; Mikulincer & Shaver, 2008). Consequently, they may be more likely to defer to partners' wishes regarding sexual behavior. Consistent with this idea, anxious representations are linked to increased risky sexual behavior and more lifetime partners (Bogaert & Sadava, 2002; Feeney, Peterson, Gallois, & Terry, 2000). Anxious women typically engage in sexual intercourse at an earlier age, perhaps complying with the traditional stereotype of a male partner's wishes (Bogaert & Sadava, 2002).

Representations and sexual behavior in adolescence

Although research has shown links between representations and sexual behavior in adulthood, less is known about the links in adolescence. Adolescence is a time when sexual activity becomes much more common. Moreover, adolescent sexual activities differ from adults' behavior and are in many ways unique to this transitional period (Graber, Brooks-Gunn, & Galen, 1998). It is particularly important to examine sexual behavior and romantic relationships in adolescence because of the multiple sequelae of reproductive health decisions for adolescents, their partners, and their families. In the United States, nearly half of adolescents aged 15–19 have had intercourse at least once (Abma, Martinez, Mosher, & Dawson, 2004). On average, people become sexually active around age 17 (Alan Guttmacher Institute, 2002), making the senior year of high school a key time for investigating how romantic representations relate to early sexual behavior. Moreover, adolescent sexual behavior encompasses

a much wider scope of behavior than just vaginal intercourse. Many adolescents do not engage in intercourse but do choose to kiss, make out, fondle (pet), or have oral sex with their partners. Moreover, those adolescents who do engage in intercourse may also vary in their light and heavy nongenital sexual behavior. Adolescents must also choose how often, how quickly, and how early they want to engage in different sexual behaviors. Adolescents also face the critical choice of whether to engage in risky sexual behaviors, such as not using birth control or having casual partners. Approximately half of sexually active adolescents have had intercourse with a casual partner (Manning, Longmore, & Giordano, 2005).

Despite the significance of adolescent sexual behavior, few researchers have examined how romantic representations are related to adolescents' sexual behavior. One of the few studies to examine such connections was conducted by Cooper, Shaver, and Collins (1998) and further described by Tracy, Shaver, Albino, and Cooper (2003). In a community sample of 13- to 19-year-olds, they found that avoidant adolescents had the least romantic relationship experience and were least likely to have had sexual intercourse or to have engaged in other sexual behaviors. Secure and anxious adolescents reported the most frequent intercourse. Avoidant and anxious adolescents were more likely than secure adolescents to have had sex with a stranger, but no differences were found in the total number of partners or the likelihood of having a sexually transmitted disease.

Although the study by Cooper and colleagues (1998) was an important initial study of representations and adolescent sexuality, further research is required. Their data were collected during 1989 and 1990. Not only might secular trends occur in adolescent sexual behavior, but also significant advances have been made in the measurement of both representations of relationships and sexual behavior. Cooper and colleagues used Hazan and Shaver's (1987) original measure, in which participants endorsed which of three attachment style paragraphs best characterized them. More recently, researchers have used multi-item questionnaires for assessing the underlying dimensions of anxiety and avoidance. Additionally, their questionnaire and the more recent questionnaires assess self-perceptions of romantic *styles*. Such measures of self-reported *styles* are different from measures of *working models* (Furman & Wehner, 1994).

Romantic styles are self-perceptions of how one approaches romantic relationships and what one expects from these relationships. Romantic working models (states of mind) are internalized representations of romantic relationships (Furman & Wehner, 1994). Working models are commonly assessed by interviews, such as the Adult Attachment Interview (AAI; George, Kaplan, & Main, 1984) or the Romantic Interview (RI), which was derived from behavioral systems theory (Furman, 2001). This approach is based on the idea that representations are reflected in an individual's narrative and appraisal of her or his experiences in close relationships; differences in representations are inferred from a person's approach to the discourse task and the degree of coherence in the discourse, rather than the relationship experiences per se (Hesse, 2008). For example, secure representations entail coherent and collaborative narratives characterized by open communication. In contrast, the narratives of those with more dismissing (avoidant) representations are incoherent as the adolescent attempts to limit the influence of the relationships by idealizing, derogating, or failing to remember experiences (Main, 1991). Preoccupied (anxious) representations also involve incoherent discourse of a different nature, typically characterized by prolonged, confused, or angry discussions of experiences.

To date, studies of romantic representations and sexual behavior have relied on self-report measures of relational styles. Styles have been shown to be important predictors of many theoretically relevant aspects of relationships (see Mikulincer & Shaver, 2008), but it is important to examine both working models and styles, because studies have found that self-reported styles and internalized working models are not highly correlated (see Crowell, Fraley, & Shaver, 2008; Roisman, 2009) and may have different patterns of association with behavior (Furman &

Simon, 2006). The inclusion of both measures allows one to identify the similarities and differences in their relationships with adolescent sexual activity.

Additionally, Cooper and colleagues (1998) primarily focused on sexual intercourse. Other sexual activity was assessed with a single rating based on whether the participant had engaged in four other sexual behaviors. To obtain a more comprehensive picture of adolescent representations and sexual behavior, it is important to look more extensively at other forms of sexual activity. For many adolescents, sexual behavior encompasses more than, and may not even include, vaginal intercourse. Additionally, light nongenital or affectionate behaviors like cuddling may be particularly related to romantic representations because such behaviors typically reflect intimacy and closeness as well as fulfilling sexual desires. Thus, the associations between romantic representations and sexual behavior may depend on the form of the sexual behavior that is measured.

Frequency of sexual activity is a common metric for examining adolescent sexual behavior, but it may not be the only way sexual behavior and romantic representations are connected. Rapidity, or how quickly an individual begins to engage in specific behaviors with people they are dating, may be indicative of the amount of closeness desired before an individual engages in a particular form of sexual behavior. Avoidant adolescents may report faster rapidity as they may be more comfortable with sexual encounters with casual partners where the emphasis is on physical pleasure, rather than emotional intimacy. Anxious adolescents may also report faster rapidity, as their emphasis is on pleasing their partner, and they may try to achieve the closeness they desire via rapid physical intimacy.

Adolescents also vary in when they first begin to participate in light and heavy nongenital and genital sexual behaviors. Earlier onset of intercourse is associated with depressive symptoms (Joyner & Udry, 2000) and risky behaviors such as violence, substance use, smoking, and delinquency (Jessor, Costa, Jessor, & Donovan, 1983). The timing of the onset of sexual activity may also reflect their representations: Anxious adolescents may engage in sexual behavior at an earlier age to increase intimacy with their partners, whereas avoidant adolescents may defer sexual behavior until a later age.

As the majority of research on adolescent sexuality has shown, risky and casual sexual behaviors are also a feature of adolescent sexuality. Engagement in risky sexual behavior may particularly characterize anxious adolescents as they may be willing to agree to risky sexual acts because of a fear of being abandoned by their partner.

Romantic experience

It is also important to consider other factors that may influence adolescent sexual behavior, such as the degree to which an adolescent is involved in romantic relationships. As sexual behavior occurs most often in the context of romantic relationships in adolescence (e.g., Elo, King, & Furstenberg, 1999; Manning, Longmore, & Giordano, 2000), those adolescents who have had more extensive romantic experience are likely to have more opportunities to engage in more sexual activity (see Zimmer-Gembeck & Helfand, 2008). Similarly, adolescents who have more experience may feel more comfortable with their partners and with moving at a faster pace, resulting in higher rapidity of sexual behavior.

Romantic representations are also related to romantic experiences. In particular, Cooper and colleagues found that secure adolescents are the most likely to be in a long-term romantic relationship and have the greatest number of dates (Cooper et al., 1998; Tracy et al., 2003). Thus, the associations between romantic representations and sexual behaviors could be spurious ones that stem from their common associations with romantic experience; in other words, those who have more romantic experiences could be more likely to have both secure representations and engage in sexual behavior. Alternatively, the associations between romantic representations and sexual behavior could be mediated by romantic experience. That is, secure individuals could be

more likely to seek out romantic relationships, which in turn could lead to more sexual activity. Finally, romantic representations and sexual behavior could be directly associated with each other, even after accounting for romantic experience, as expectations regarding intimacy and closeness would be expected to affect sexual behavior. It is important to determine if direct links exist or if the associations between representations and sexual behavior could be accounted for by their common association with romantic experience. As yet, these alternative possibilities have not been examined.

The present study

The aim of this study was to examine the links between romantic representations and sexual behavior in adolescence. In doing so, we sought to provide a more comprehensive assessment of romantic representations. Accordingly, we examined both a self-report measure of styles and an interview measure of working models. We predicted similar associations with styles and models as they are both indices of adolescents' representations regarding romantic relationships.

We also sought to present a more comprehensive portrait of these associations by examining the frequency (how often), rapidity (after how many dates), and onset (grade when first done) of sexual activity, as well as indices of risky sexual behavior. We examined the frequency, rapidity, and onset of light nongenital, heavy nongenital, and genital sexual activity to determine whether the associations with romantic representations varied as a function of the nature of sexual activity. We expected that the associations would be strongest for light nongenital behaviors, such as cuddling and kissing, as such behaviors primarily reflect affection and closeness. Moreover, adolescents' decisions to engage in genital sexual behaviors are influenced by values and religious beliefs as well as other factors (see Zimmer-Gembeck & Helfand, 2008); because many variables affect genital activity, romantic representations' associations with genital sexual behavior were not expected to be as strong as those with light nongenital activity.

Finally, this study sought to clarify the nature of the relations among representations, sexual activity, and romantic experience. In particular, we examined whether direct associations existed between representations and sexual behavior, or if such relations reflected associations with romantic experience.

Hypotheses

H1: *Those with more avoidant representations may be less comfortable with the intimacy and closeness that sexual activity entails, whereas those with less avoidant representations may seek out closeness with partners through physical intimacy. Accordingly, we hypothesized that more avoidant romantic representations would be related to lower frequencies of sexual behavior and later onset of sexual behavior. As discussed previously, these associations were expected to be stronger for light nongenital activity than for genital activity. Additionally, those with more avoidant representations may engage in sexual behavior with greater rapidity as they may be more comfortable with sexual behavior without much intimacy.*

H2: *We expected anxious adolescents to be strongly motivated to attract and hold on to romantic partners. Therefore, we predicted that more anxious representations would be related to an earlier onset of sexual activity, as well as a high frequency and quick rapidity of sexual behaviors. We predicted that these associations would be most robust for light nongenital behaviors. We also predicted that more anxious representations would be related to greater rates of risky sexual behavior, including more partners and more casual partners.*

H3: *Finally, we hypothesized that both direct and indirect associations would occur between representations and sexual behavior.*

Method

Participants

Participants were drawn from a total sample of 200 adolescents (100 girls and 100 boys) who were participating in a longitudinal study investigating the role of close relationships in adolescent psychosocial development and adjustment. The sample was originally recruited from a diverse range of neighborhoods and schools in a large Western metropolitan area when the adolescents were in the 10th grade. Letters and brochures describing the project were sent to a broad sample of families with adolescents residing in various zip codes and to lists of students enrolled in various high schools. Participants were selected such that the sample was representative of the ethnic distribution of the United States; thus, 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 as assessed by participants' self-report. The sample was of average intelligence (WISC–III Vocabulary Standard Score $M = 9.80$, $SD = 2.44$) and comparable to national norms on measures of internalizing and externalizing symptomatology (see Furman, Low, & Ho, 2009). Approximately 55% of participants' mothers reported that they had a college degree, as would be expected from an ethnically representative sample from this particular metropolitan area.

Adolescents were interviewed about their relationships and observed interacting with close others. Adolescents, friends, parents, and partners also completed questionnaires to assess romantic experiences, relational styles, relationship qualities, sexual behavior, and adjustment. In between waves, phone interviews were conducted every 4 months to enhance retention; standard longitudinal retention techniques were also employed (see Capaldi & Patterson, 1987).

For the aims of this study, data are drawn from the 2003 to 2004 Wave 3 data collection, which was 24 months after the initial assessment at Wave 1. Participants were paid $40 for participating in Wave 3. Only 1 male out of the original 200 participants did not complete this assessment wave. At Wave 3, the mean age of the participants was 17.96 years ($SD = .51$), and almost all were in the 12th grade. With regard to sexual orientation, 88.6% said they were heterosexual/straight, whereas the remaining 11.4% said they were bisexual, gay, lesbian, or questioning. We chose to retain the sexual minorities in the sample both to be inclusive and because the majority of them reported that they were either bisexual or questioning their sexual identity.

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

Measures

Behavioral Systems Questionnaire

Participants completed the Behavioral Systems Questionnaire for Romantic Partners (BSQ–RP; Furman & Wehner, 1994), a 36-item self-report designed to assess secure, preoccupied, and dismissing relational styles in romantic relationships. The BSQ resembles attachment style questionnaires but assesses intimacy and closeness with respect to caregiving, affiliation, and sexuality as well as attachment. For example, a sample item on the preoccupied scale referring to caregiving is: "Sometimes I try to comfort my boy/girlfriends more than the situation calls for." A sample item on the secure scale referring to affiliation is: "Both my boy/girlfriends and I make frequent efforts to see or talk with each other." Secure, dismissing, and preoccupied styles were each assessed using 12 items on 5-point Likert scales.

In the current literature on representations, two dimensions are consistently reported: anxious and avoidant (see Mikulincer & Shaver, 2008). Thus, we expected to find evidence of these two dimensions in our participants' style scores on the BSQ. A principal axis factor analysis with oblique rotation was conducted to determine the factor structure of the BSQ. A two-factor solution was found to

provide the best fit theoretically, and together the two factors accounted for 40% of the variance. The two factors were (a) an avoidant style on which all the dismissing items loaded positively and all the secure items loaded negatively (eigenvalue = 9.56) and (b) an anxious style on which all the preoccupied items loaded positively (eigenvalue = 5.97). Three of the 36 items loaded on both factors. Two relational style scores were used in all analyses, both with good internal reliability: (a) an avoidant dimension score computed by subtracting each participant's score on the secure scale from his or her score on the dismissing scale ($\alpha = .93$) and (b) an anxious dimension score that was equal to the preoccupied scale score ($\alpha = .86$). These dimensions resemble the avoidance and anxiety dimensions commonly found in adult attachment research (Brennan, Clark, & Shaver, 1998; Simpson, Rholes, & Nelligan, 1992) but incorporated perceptions of caregiving, affiliation, and sexual behavior, as well as attachment.

Romantic Interview

Participants were individually administered the RI. The RI was derived from the AAI (George et al., 1984) but was designed to assess working models of romantic relationships (Furman, 2001). Like the AAI, the RI is a semistructured interview, which typically takes between 45 min and $1^1/_2$ hr to administer. The interview focused on participants' one to three most important romantic relationships in recent years. Many questions on the RI are similar in intent and content to those of the AAI. For example, participants are asked to select five adjectives to describe particular romantic relationships and are asked to illustrate their adjectives with specific examples. They are asked what they did when they are upset, whether they have ever felt rejected, and what they have gained from their romantic relationships. Some modifications are included to take into account the differences between parent–child relationships and romantic relationships. For example, participants are asked what they did when they were upset but not what they did when they were hurt or ill, as adolescents do not commonly turn to romantic partners for support in these particular instances. Additionally, the RI includes questions about the caregiving and affiliative systems in romantic relationships as well as the attachment system. For example, the interview includes questions about how the participant responded when a partner was upset as well as what the participant did when she or he was upset.

Coding of interviews

The interviews were audio taped and subsequently transcribed verbatim. Working models (states of mind) were primarily assessed using Main and Goldwyn's (1985/1998) scales and Crowell and Owens' (1996) valuing of intimacy and autonomy scales. As in the coding of the AAI, these working model (states of mind) scale scores assess coherence of discourse and are the primary basis for coding the working model. The nature of the analyses in this study required continuous (vs. categorical) scores. Accordingly, the coders rated how prototypically secure, dismissing, and preoccupied the transcript was on 9-point scales (1 = *has none of the features of the type*, 9 = *prototypic instance*). These ratings were based on the same system as the classifications; in fact, discriminant function analyses using the three prototype ratings accurately predicted 100% of the boys' classifications and 98% of the girls' classifications.

As with the BSQ, the dismissing and secure prototype scores of the RI were strongly negatively correlated ($r = -.63$); thus, these two were combined to create an avoidant working model dimension by subtracting the secure prototype score from the dismissing prototype score. An anxious working model dimension was calculated from the preoccupied prototype rating.

All coders had attended Main and Hesse's Adult Attachment Workshop and had received additional training and practice on the coding of romantic narratives. The reliability of the anxiety and avoidance dimensions was satisfactory (intraclass correlation coefficients [ICCs] = .70 & .67, respectively).

Sexual behavior

The Sexual Attitudes and Behavior Survey (SABS; Furman & Wehner, 1992b) is a self-report questionnaire that was administered by computer-assisted self-interviewing techniques to encourage participants to respond honestly (Turner, Ku, & Rogers, 1998). The SABS asks about a series of questions about nine different sexual behaviors. The frequency of sexual behaviors was measured by asking how often participants engaged in each behavior during the past 12 months. Rapidity of each sexual behavior was measured by asking participants the number of dates and times going out before they begin engaging in each sexual behavior. Onset of sexual behavior was measured by participant reports of the grade they were in when they initiated each type of sexual behavior.

We conducted confirmatory factor analyses using the Amos5 software package (Arbuckle, 2006) to determine the factor structure of the frequency, rapidity, and onset of the nine sexual behaviors. We compared a theoretical model with three factors accounting for the eight specific sexual behaviors: light nongenital sexual behavior (cuddling, kissing, and making out), heavy nongenital sexual behavior (light petting, heavy petting, and dry sex), and genital sexual behavior (oral sex and intercourse) to a model which had two factors of nongenital and genital sexual behavior. For frequency, the three-factor solution was better than the two-factor solution, $\Delta\chi^2 = 114.09$, $p < .01$, but marginal, $\chi^2(17) = 43.70$, comparative fit index (CFI) = .98, root mean square error of approximation (RMSEA) = .09. The fit improved with the addition of three secondary cross-loadings (making out and oral sex on heavy nongenital, and heavy petting on genital sexual behaviors), $\Delta\chi^2 = 15.20$, $p < .01$; for the three-factor model with cross-loadings, $\chi^2(14) = 28.50$, CFI = .99, RMSEA = .07. For the rapidity scale, the three-factor, three cross-loading model also provided the best fit, $\chi^2(14) = 64.30$, CFI = .96, RMSEA = .14, although only the CFI was acceptable. Finally, for the timing of onset scale, the three-factor, three cross-loading model fit was also best, $\chi^2(14) = 31.3$, CFI = .99, RMSEA = .08. We decided to use only the primary loading models to derive the scales from the three factors because the secondary loadings were $< .40$. Composite scores for frequency, rapidity, and onset of light nongenital, heavy nongenital, and genital behavior were derived by averaging the three items loading on each factor. Frequency, rapidity, and onset scores were derived separately for light nongenital sexual activity (cuddling, kissing, and making out), heavy nongenital (dry sex, light petting, and heavy petting), and genital activity (intercourse and oral sex). Internal reliability for the sexual behavior subscales was good, with Cronbach αs ranging from .73 to .95, $M = .84$.

The SABS also included the Scale of Sexual Risk Taking (SSRT; Metzler, Noell, & Biglan, 1992), which consisted of 13 questions about risky partner characteristics, contraceptive use, and substance use in conjunction with sexual activity. Finally, participants were asked the number of casual partners and the total number of partners with whom they had engaged in intercourse with during the past year as two additional indices of risky sexual behavior. Internal reliability for the SSRT was adequate ($\alpha = 70$).

Romantic experience

The Dating History Questionnaire (Furman & Wehner, 1992a) assessed the degree of romantic experience by asking participants whether they had engaged in each of 18 different types of romantic activities or experiences, from having a romantic interest to falling in love, dating, having a serious relationship, and becoming engaged and married. The romantic experience scale demonstrates good internal reliability, Cronbach's $\alpha = .83$.

Results

Preliminary analyses

Data preparation

All data were checked for outliers, skewness, and kurtosis. Low and high outliers were recoded to 1.5 times the interquartile range

below the 25th or above the 75th percentile, respectively (Tukey, 1977).

Missing data

The average percentage of missing data was 11.55%. Most missing data were due to questions that were not applicable to participants who had not yet engaged in certain sexual behaviors. Multiple imputation was conducted using the NORM software package (Schafer, 1997). We included a number of auxiliary variables in the imputation model to strengthen the likelihood of meeting the assumption that the variables are missing at random (Allison, 2002). We imputed five data sets and conducted analyses on each. The results of all data analyses reported subsequently were averaged across the five data sets. Supplementary analyses revealed that the results with the original, nonimputed data set were equivalent to those with the imputed data for all analyses.

Pattern of associations

Table 1 presents the bivariate correlations for all major variables, gender, and ethnicity. Differences between correlations were tested by using Fisher r to z transformations to calculate z scores for each correlation. We then determined if the two z scores differed significantly (see Steiger, 1980). As predicted, secure and dismissing styles were negatively related to one another ($r = -.73$), as were secure and dismissing working models ($r = -.64$). Thus, we conducted all subsequent analyses using the avoidant dimension consistent with the factor analysis results described above.

As predicted, more avoidant styles were associated with lower frequencies of genital sexual behavior, heavy nongenital frequency, and light nongenital frequency. The correlation between avoidant styles and light nongenital frequency was significantly greater than the relation between avoidant styles and heavy nongenital frequency, $t(195) = 3.08$, $p < .01$, which in turn was greater than the relation between avoidant styles and genital frequency, $t(195) = 2.3$, $p < .05$. Similarly, more avoidant working models were significantly associated with lower frequencies of heavy nongenital frequency and light nongenital frequency; these two correlations differed significantly from one another, $t(195) = 1.92$, $p < .05$. These relations were both significantly greater than the trend-level relation between avoidant working models and genital frequency. Finally, less avoidant working models were also associated with later onsets for genital and heavy nongenital sexual behavior but not light nongenital time of onset. However, the correlations between avoidant working models and time of onset did not differ significantly from one another.

Romantic experience was inversely related to avoidant styles, avoidant working models, and anxious styles, but not anxious working models. Romantic experience was related to all dimensions of frequency and onset but not related to rapidity. Romantic experience was also related to the risky sex scale, number of casual partners in the past year, and total number of sexual partners in the past year.

We examined gender differences on the primary variables by conducting a series of independent samples t tests. Girls had less avoidant relational styles than boys ($M = 1.98$, $SD = .42$ vs. $M = 2.34$, $SD = .68$, respectively), $t(196) = 4.26$, $p < .01$. Boys had more anxious styles ($M = 2.13$, $SD = .64$) than girls ($M = 2.32$, $SD = .63$), $t(196) = 2.15$, $p = .04$. Girls also had less avoidant working models ($M = -1.33$, $SD = 4.23$) than boys ($M = .79$, $SD = 4.79$), $t(196) = -3.29$, $p < .01$). However, girls had more anxious working models ($M = 3.22$, $SD = 2.41$) than boys ($M = 2.05$, $SD = 1.59$), $t(196) = -4.02$, $p < .01$.

Boys also reported more rapidity in light nongenital behavior ($M = 2.12$, $SD = .73$ vs. $M = 2.57$, $SD = 1.01$), $t(196) = -3.54$, $p < .01$; heavy nongenital behavior ($M = 3.39$, $SD = 1.03$ vs. $M = 3.91$, $SD = 1.01$), $t(196) = -3.60$, $p < .01$; and genital behavior ($M = 4.25$, $SD = 1.07$ vs. $M = 4.67$, $SD = .96$), $t(196) = -2.99$, $p < .01$. Ethnicity (majority or minority status) was not significantly correlated with any of the 17 primary variables except light nongenital rapidity.

Table 1. *Correlations of gender, ethnicity, romantic relationship history, relational styles, and sexual behavior scales*

	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Sex	.04	.11	.29**	−.15*	.23**	.28**	.01	.03	.08	.21**	.25**	.25**	−.03	.00	.09	−.09	.00	.03
Ethnicity	—	.07	−.09	.02	−.06	.08	.00	−.07	−.10	.02	.06	.16*	−.11	−.01	−.02	.07	−.01	.05
RomExp		—	.38**	−.19*	.32**	.06	.55**	.54**	.68**	.12	.12	−.01	−.55**	−.63**	−.60**	.17*	.34**	.40**
AvStyl			—	.37**	−.35**	−.06	−.21**	−.35**	−.47**	−.22**	−.13	.00	.12	.17	.14	.06	−.07	−.08
AnxStyl				—	−.19*	.06	.03	.00	−.13	−.12	−.07	−.04	.04	.04	.13	.14	.11	.14
AvWM					—	.01	−.13	−.25**	−.33**	−.14	−.08	−.02	.24**	.23*	.18	.00	−.02	−.10
AnxWM						—	.10	.10	.05	−.08	.02	.01	−.12	.03	.10	.10	.12	.15
GenFrq							—	.79**	.71**	−.18	−.17*	−.17*	−.67**	−.57**	−.44**	.33**	.62**	.73**
HNGFrq								—	.81**	−.02	−.16	−.24**	−.55**	−.54**	−.41**	.23**	.44**	.57**
LNGFrq									—	.09	.01	−.17*	−.56**	−.58**	−.48**	.21**	.40**	.49**
GenRapi										—	.77**	.59**	.28	.16	.04	−.32**	−.31**	−.31**
HNGRapi											—	.72**	.18*	.16	.08	−.27**	−.28**	−.31**
LNGRapi												—	.22**	.19*	.17*	−.25**	−.26**	−.25**
GenOnset													—	.73**	.57**	−.34**	−.52**	−.59**
HNGOnset														—	.81**	−.34**	−.48**	−.55**
LNGOnset															—	−.27**	−.38**	−.40**
Casual Ps																—	.65**	.62**
Total Ps																	—	.80**
Risky Sex																		—

Note. $N = 198$. RomExp = romantic relationship experience; AvStyl = secure styles; AnxStyl = anxious styles; AvWM = secure working models; AnxWM = anxious working models; GenFrq = genital frequency; HNGFrq = heavy nongenital frequency; LNGFrq = light nongenital frequency; GenRapi = genital rapidity; HNGRapi = heavy nongenital rapidity; LNGRapi = light nongenital rapidity; GenOnset = Genital onset; HNG = heavy nongenital onset; LNG onset = light nongenital onset; Casual Ps = causal partners; Total Ps = total partners.

*$p < .05$.

**$p < .01$.

Primary analyses

Relational representations

We conducted a series of multiple regression analyses to assess how romantic relational styles and working models were related to genital, heavy nongenital, and light nongenital scales for frequency, rapidity, and onset. Similar analyses were conducted to examine the relations among representations and the three indices of risky sexual behavior. Separate regression analyses tested the associations of styles and working models with each type of sexual behavior, with separate equations for styles and working models. In each analysis, both the avoidant and anxious style or working model dimensions were entered simultaneously into the equation; the centered interaction between corresponding avoidance and anxiety was entered in a second step. A preliminary set of analyses revealed that neither gender nor ethnicity interacted with the avoidance and anxiety scores; additionally, the results for anxiety, avoidance, and their interaction were the same, regardless of whether gender and ethnicity had been included in an initial step. Because the primary results were the same, the regression coefficients presented in Tables 2–5 did not include the gender or ethnicity variables.

Regression results are presented for both styles and working models in Tables 2–5 for each set of outcome variables. As hypothesized, more avoidant styles were significantly related to lower genital, heavy nongenital, and light nongenital frequencies (Table 2). Avoidant styles were related to slower genital rapidity but were not related to any of the timing of onset or risky sexual behavior variables. More anxious styles were related to increased heavy nongenital and genital frequencies, but not to light nongenital frequency. Anxious styles were not related to any of the rapidity (Table 3) or time of onset scales (Table 4). As predicted, anxious styles were significantly related to increased risky sexual behavior (Table 5).

More avoidant working models were related to lower frequencies of light nongenital and heavy nongenital sexual behavior. More

Table 2. *Regressions examining representations as predictors of frequency of sexual behaviors*

	Styles						Working models					
	Light nongenital		Heavy nongenital		Genital		Light nongenital		Heavy nongenital		Genital	
	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2
STEP 1		.23		.14		.06		.12		.08		.03
Avoidant representations	−.49**		−.41**		−.26**		−.33**		−.25**		−.13	
Anxious representations	.05		.15*		.13*		.06		.11		.11	
STEP 2		.00		.00		.00		.02		.00		.00
Avoidant × Anxious Representations	.03		.01		−.01		−.01		−.01		.06	

Note. $N = 198$.
* $p < .05$.
** $p < .01$.

Table 3. *Regressions examining representations as predictors of rapidity of sexual behaviors*

	Styles						Working models					
	Light nongenital		Heavy nongenital		Genital		Light nongenital		Heavy nongenital		Genital	
	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2
STEP 1		.00		.02		.05		.00		.01		.03
Avoidant representations	.02		.12		−.21*		−.02		−.08		−.14	
Anxious representations	−.04		−.03		−.04		.01		.02		−.08	
STEP 2		.00		.00		.00		.01		.00		.00
Avoidant × Anxious Representations	.00		.02		.05		.00		.01		.03	

Note. $N = 198$.
* $p < .05$.

Table 4. *Regressions examining representations as predictors of time of onset of sexual behaviors*

	Styles						Working models					
	Light nongenital		Heavy nongenital		Genital		Light nongenital		Heavy nongenital		Genital	
	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2
STEP 1		.03		.03		.02		.05		.06		.08
Avoidant representations	.10		.18		.12		.17		.23*		.24**	
Anxious representations	.10		−.03		−.01		.10		.02		−.12	
STEP 2		.00		.01		.01		.06		.03		.01
Avoidant × Anxious Representations	.03		.03		.02		.05		.06		.08	

Note. $N = 198$.
* $p < .05$.
** $p < .01$.

Table 5. *Regressions examining representations as predictors of risky sexual behaviors*

	Styles						Working models					
	Total partners		Casual partners		Risky sex scale		Total partners		Casual partners		Risky sex scale	
	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2
STEP 1		.03		.02		.04		.02		.01		.04
Avoidant representations	−.13		.00		−.15		−.02		.00		−.10	
Anxious representations	.16		.14		.20*		.12		.10		.16	
STEP 2		.00		.00		.01		.01		.01		.01
Avoidant × Anxious Representations	.03		.02		.04		.02		.01		.04	

Note. $N = 198$.
* $p < .05$.

avoidant working models were also related to later onset of heavy nongenital and genital sexual behavior. Avoidant working models were not related to the timing of onset or the risky sexual behavior variables. Anxious working models were not related to any of the sexual variables.

Romantic experience

Avoidant styles were related to romantic experience, genital rapidity, and all levels of frequency of sexual behavior; similarly, avoidant working models were related to romantic experience and to light nongenital and genital frequency and to onset of heavy nongenital and genital behavior. Accordingly, we examined whether the associations between representations and sexual behaviors reflect direct or indirect effects.

Direct effects were assessed by examining the relation between avoidant styles/models and each sexual behavior variable after partialling out romantic experience. A distribution-of-products approach was used to test for indirect effects because it has better statistical power and less likelihood of Type I errors than traditional methods (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002; MacKinnon, Lockwood, & Williams, 2004). A confidence interval for the indirect effect is derived based on the asymmetric distribution of the product of two coefficients: (a) α, the effect of the independent variable on the mediator and (b) β, the effect of the mediator on the dependent variable. The α coefficient was derived by regressing the potential mediator, romantic experience, on the independent variable of avoidant styles or working models. The β coefficient was derived by regressing the dependent variable (one of the sexual behavior measures) on the potential mediating variable of romantic experience and the independent variable of avoidant styles or working models. Confidence intervals were then calculated using the Prodclin software program (MacKinnon, Fritz, Williams, & Lockwood, 2007); a significant indirect effect is present when the confidence interval does not contain a value of zero. Table 6 presents a summary of the results of these analyses.

Table 6. *Product of coefficient analyses examining romantic experience as a mediator of observed links*

Independent variable (IV)	Mediator (M)	Dependent variable (DV)	IV–DV total	IV–DV partial	IV–M	M–DV	CI product
Avoidant styles	Romantic experience	Light nongenital frequency	−.47**	−.31**	−.38**	.68**	.29, .69
Avoidant models	Romantic experience	Light nongenital frequency	−.33**	−.17*	−.32**	.68**	.03, .08
Avoidant styles	Romantic experience	Heavy nongenital frequency	−.35**	−.19*	−.38**	.54**	.21, .54
Avoidant models	Romantic experience	Heavy nongenital frequency	−.25**	−.10	−.32**	.54**	.03, .07
Avoidant styles	Romantic experience	Genital frequency	−.21**	.00	−.38**	.55**	.22, .54
Avoidant models	Romantic experience	Heavy nongenital time of onset	.23*	.04	−.32**	−.63**	−.15, −.07
Avoidant models	Romantic experience	Genital time of onset	.24**	.08	−.32**	−.56**	−.13, −.06

Note. $N = 198$. Standardized betas are presented. IV–DV total = total effect of the independent variable on the dependent variable; IV–DV partial = direct effect of the independent variable on the dependent variable after accounting for the mediator; CI product = confidence interval of the product.

*$p < .05$.

**$p \leq .01$.

As shown in Table 6 in the column labeled IV–DV partial, there were direct effects of both avoidant styles and models on light nongenital frequency. A direct effect between avoidant styles and heavy nongenital frequency was also observed. Additionally, indirect effects were found between avoidant romantic styles and models, as well as the frequencies of light and heavy nongenital sexual behavior. Thus, romantic experience partially accounted for the relation between avoidant romantic styles and models, as well as light nongenital and heavy nongenital frequencies, but direct effects also occurred.

However, only indirect effects were found in the analyses involving avoidant styles and genital frequency; similarly, only indirect effects occurred between avoidant working models and heavy nongenital frequency, and onset of both heavy nongenital and genital sexual behavior. Thus, romantic experience fully accounted for these associations. Direct and indirect effects of anxious representations on sexual behavior were not examined, as neither anxious styles nor anxious working models were related to romantic experience or sexual behaviors.

Discussion

The present research demonstrates that romantic representations are linked to multiple aspects of adolescent sexual behavior and extends previous work in several ways. It is among the first to examine the relation among romantic representations, sexual behavior, and romantic experience in adolescence instead of with college student or adult populations. Additionally, it is among the first studies with adolescents to examine a number of different aspects of sexual experience by assessing frequency, rapidity, time of onset, and risky sexual behavior. Similarly, we extended prior work by examining light nongenital and heavy nongenital sexual behavior, as well as genital sexual behavior. Finally, we used self-report and interview methods to examine both styles and working models with respect to romantic relationships.

Romantic representations and sexual behavior

As predicted and consistent with prior work (Cooper et al., 1998; Tracy et al., 2003), more avoidant romantic representations were associated with less frequent genital sexual behavior; moreover, avoidance was also associated with less frequent heavy nongenital and light nongenital behavior. In fact, the pattern of relations with romantic representations was strongest for light nongenital sexual behavior, as predicted. This pattern of relations is consistent with the idea that adolescents with more avoidant romantic representations may shun sexual activities because they do not value the affection, intimacy, and closeness with partners that often accompany these behaviors, particularly light nongenital behaviors. In contrast, adolescents who are less avoidant may be more inclined to use these sexual behaviors to demonstrate affection, intimacy, and closeness with their partners. Alternatively, the associations between romantic representations and genital sexual activity may not be as strong as those with light nongenital and heavy nongenital behavior, because decisions about whether and when to engage in genital behavior in adolescence may also be strongly influenced by moral values and norms regarding sexual activity; in other words, some adolescents who are less avoidant may value intimacy and affection but choose not to engage in genital sexual behavior because of norms or moral values.

More avoidant working models were also associated with a later onset of genital sexual behavior. Taken together with the findings concerning the frequency of sexual activity, the results paint a clear picture of avoidance being associated with more limited sexual experience, which may stem from the minimization of a desire to be close to romantic partners.

Interestingly, avoidant romantic representations were not related to the number of partners or number of casual partners as is commonly found in research on representations in adulthood (e.g., Feeney et al., 1993; Paul et al., 2000; Simpson & Gangestad, 1991). One explanation for the contrast between these results and those found with adults may be that avoidant adolescents are relatively new to the world of romantic and sexual relationships, and their romantic representations lead them to avoid experiences that might foster intimacy or closeness with partners. In fact, those with more avoidant styles had less romantic experience. Conversely, most young adults have accrued some experience with romantic or sexual partners; additionally, sexual behavior, particularly genital sexual behavior, becomes increasingly more prevalent (Halpern, Waller, Spriggs, & Hallfors, 2006). Perhaps in adolescence individuals with more avoidant romantic representations may be likely to engage in relatively little sexual behavior, whereas in adulthood when the shunning of sexual behavior would be non-normative, those with avoidant romantic representations may seek other means of minimizing the emotional closeness that is involved in sexual behavior. They may focus on the fun and experimental aspects of sexual activity or engage in such activity with casual partners. Longitudinal work will be required to determine whether and how such a developmental shift occurs from adolescence into adulthood.

As predicted, the regression analyses revealed that more anxious styles were associated with more frequent heavy nongenital and genital sexual behaviors. More anxious styles were also associated with more risky sexual behavior. Adolescents with anxious styles may feel sexual behavior is an avenue to gain increased intimacy with their partners. Similarly, they may be less likely to use birth control and more likely to engage in drug or alcohol use before sex because they want to comply with their partners' wishes and do not want to risk losing them or decreasing intimacy. Contrary to our prediction, there were no significant differences in magnitude between the correlations for anxious representations and light nongenital, heavy nongenital, and genital working models. Anxious adolescents may use all levels of sexual behavior as a means to foster closeness with partners.

The different pattern of results between the correlation and regression analyses reflected the fact that we included both avoidant and anxious representations simultaneously in the regressions. In effect, if one takes into account both dimensions, the associations between sexual behavior and anxiety are more apparent.

Romantic experience, romantic representations, and sexual behavior

Not only were more avoidant romantic representations and sexual behaviors associated with each other, but both sets of variables were associated with romantic experience. In particular, less avoidant romantic representations, frequent sexual behavior, and early onset of sexual behavior were all associated with greater romantic experience. These patterns of relations raised questions about whether the associations between romantic representations and sexual behavior are direct or indirect, or spurious, a question that has not been examined by prior investigators.

The analyses of direct and indirect effects yielded two patterns of findings. First, direct effects were found between avoidant styles and working models and the frequency of light nongenital sexual behavior. Direct effects were also found between avoidant styles and heavy nongenital sexual behavior. Thus, those with more avoidant romantic representations may be less likely to engage in light nongenital and heavy nongenital sexual behavior, even when romantic experience is taken into account. Adolescents with more avoidant romantic representations may be less interested in the closeness and intimacy typically associated with such sexual behaviors.

Additionally, indirect effects were found between avoidance and the frequencies of light nongenital and heavy nongenital sexual behavior. These effects could indicate that romantic experience partially mediates the connections between avoidant romantic representations and frequencies of light nongenital and heavy nongenital sexual behavior. Thus, adolescents with more avoidant romantic representations may be less likely to have romantic relationships, which in turn may make it less likely for them to engage in light nongenital or heavy nongenital sexual behavior. Alternatively, the indirect effect could reflect a spurious relation. That is, romantic experience may lead to both less avoidant representations and more frequent light nongenital and heavy nongenital sexual behavior. The fact that direct effects were found, however, suggests that the association between less avoidant romantic representations and the frequencies of light nongenital and heavy nongenital sexual behavior are not spurious relations stemming from their mutual association with romantic experience.

Second, the analyses revealed only indirect effects between avoidant romantic representations and genital frequency and the onset of heavy nongenital and genital sexual behavior. These associations could mean that adolescents with more avoidant romantic representations may be less likely to have romantic experiences, which in turn make it less likely for them to engage in genital or heavy nongenital sexual behavior. Alternatively, it is possible that the associations between avoidance and these specific behaviors are spurious ones; that is, romantic experience may lead to less avoidant romantic representations and to more frequent genital sexual behavior and earlier onsets of heavy nongenital and genital sexual behavior. Longitudinal work is required to determine if these associations are, in fact, mediated or spurious (MacKinnon, Kroll, & Lockwood, 2000).

These analyses also underscore the importance of examining light and heavy nongenital sexual behaviors as well as genital sexual behaviors in adolescence, as different patterns of relations were found for these variables. Similarly, the links between avoidant romantic representations and both light and heavy nongenital frequencies were stronger than those for genital sexual behavior. Different sexual activities may vary in their meaning and significance in adolescent romantic relationships. For example, kissing is associated with relationship satisfaction and commitment across the span of adolescence, whereas genital sexual activity is inversely related to satisfaction early in adolescence and

unrelated later in adolescence (Welsh, Haugen, Widman, Darling, & Grello, 2005).

Styles and working models

Past research on the associations between representations and sexual behavior has relied on self-report measures of styles. This study contributed to the literature by examining both styles and working models. The findings regarding avoidant styles and working models were relatively similar. For both, greater avoidance was associated with less frequent sexual behavior. More avoidant working models were significantly associated with later onset of heavy nongenital and genital sexual behavior; the associations between avoidant styles and onset were nonsignificant, although in the expected direction. Avoidant styles were associated with rapidity, but only for genital sexual behavior. Finally, avoidant styles and working models were not associated with risky sexual behavior, but the results were in the expected direction and approached significance ($p < .10$). The fact that similar patterns of associations were found with different methods enhances our confidence in the relations among representations.

However, the associations with anxious styles and working models were quite different. Anxious styles were associated with the indices of frequency and riskiness of sexual behavior, but anxious working models were not significantly related to the sexual behavior variables in the regression analyses. The absence of significant results for anxious working models could stem from the fact that most adolescents had relatively low scores on our prototype rating of preoccupation. In particular, 84% had ratings of less than 5 on this 9-point continuous scale. Thus, only 16% of participants would have been classified as preoccupied when defined in the classical categorical manner.

Although this low proportion is typical of community samples of adolescents (Ammaniti, van IJzendoorn, Speranza, & Tambelli, 2000; Furman, Simon, Shaffer, & Bouchey, 2002; Hamilton, 2000; Seiffge-Krenke, 2006), anxious (preoccupied) working models are somewhat more common among adolescents with greater levels of socioemotional difficulties (Allen, Hauser, & Borman-Spurrell, 1996; Rosenstein & Horowitz, 1996). Accordingly, studies of such populations might yield greater insight regarding how anxious working models are associated with adolescent sexual behaviors.

Implications for public health

This study has practical implications in the field of public health. Negative health consequences resulting from sexual behavior are a real threat to many teens. Twenty-five percent of girls aged 15–19 are infected with the human papilloma virus (Centers for Disease Control, 2008), and adolescents and young adults form over half of the new STD infections, despite forming only 25% of the sexually active population (Weinstock, Berman, & Cates, 2004). Adolescents between the ages of 15 and 19 accounted for 12% of pregnancies in 2002, and the adolescent birth rate in the United States (43 per 1,000 females) was over twice that of Canada in 2002 (20 per 1,000; Abma et al., 2004). The present results suggest that adolescents with more anxious representations may be at greater risk for engaging in risky sexual practices and may be appropriate targets for education or intervention programs. Adolescents with more secure (less avoidant) representations may be engaging in sexual behaviors at earlier ages and with greater frequency, but our findings suggest that this could be due to them spending more time in romantic relationships. Nevertheless, sexual behavior involves inherent risk for pregnancy and disease, even if it reflects more romantic experience. Results from this study suggest one avenue for examining individual differences in sexual behavior and identifying targets for public health intervention strategies.

Additionally, the present findings underscore the importance of examining multiple facets of sexual activity. An examination of Table 1 reveals that frequency, rapidity, onset, and risky sexual behavior are related to each other, but usually only moderately. Similarly, although light and heavy nongenital sexual

behaviors often precede genital sexual behavior, their associations with romantic representations varied in magnitude. As we get a better understanding of these different aspects of sexual activity, we should obtain a better picture of precisely how risky sexual behavior emerges.

Limitations and future directions

This study was cross-sectional, which limits our ability to draw conclusions about the direction of effects between relational representations and sexual behavior. The prevailing idea is that romantic representations affect how individuals approach interactions with romantic partners, including sexual behavior. However, it could also be true that one's sexual experiences affect one's romantic representations of romantic partners and relationships. For example, later and less frequent sexual activity could lead to more avoidant romantic representations. Future work should move beyond the limitations of cross-sectional design and examine links between romantic representations and sexual behavior across time to tease apart whether romantic representations affect sexual behavior or vice versa, or whether they influence one another over time via feedback loops between romantic representations and behavior. Similarly, longitudinal studies are required to provide more stringent tests of mediation.

Our hypotheses were informed by prior work on motivations underlying sexual behavior (e.g., Davis, Shaver, & Vernon, 2004; Schachner & Shaver, 2004; Tracy et al., 2003). At the same time, we did not directly assess such motivations in this study. The interpretation of the present findings would be strengthened by examining such motives, representations, and the different facets of sexual behavior in the same study.

Further research also needs to address the interplay between individual and partner characteristics in adolescence and emerging adulthood, and how they behave within the relationship dyad. Most sexual behavior involves two participants who initiate behaviors and make decisions both individually and jointly. Detailed analyses of how partners influence one another's behavior along these dimensions are needed. Additionally, further work is needed with subgroups of adolescents and emerging adults, particularly sexual minority youth (Diamond, Savin-Williams, & Dube, 1999), ethnic minorities, and young people in other countries and cultures (Bouchey & Furman, 2003).

Examining developmental trajectories of romantic representations and sexual behavior over time should also be a priority for future research. Several authors have explicitly called for longitudinal studies on the transition from adolescence to emerging adulthood to identify the roles sexuality, romantic relationship qualities, and romantic representations play in development (e.g., Kan & Cares, 2006; Lefkowitz & Gillen, 2006; Manlove, Franzetta, Ryan, & Moore, 2006; Upchurch & Kusunoki, 2006). Investigating how participants' romantic representations and sexual behavior change as they age will be critical for understanding how adolescents and adults differ in their patterns of sexual behavior. It is hoped that this study's demonstration of the associations between romantic representations and sexual behavior in adolescence stimulates continued research in the area of romantic and sexual relationship trajectories in adolescence and emerging adulthood.

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