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Religiosity and Sexual Involvement Within Adolescent Romantic Couples

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Abstract

The impact of religiosity in adolescent romantic partnerships on sexual behavior was assessed. Data were obtained from the National Longitudinal Study of Adolescent Health reciprocated couples database using religious- and relationship-oriented variables to predict sexual involvement in 374 couples (748 participants). We found that individual- and couple-based religiosity impacted sexual behavior. These findings provide evidence for dyad religiosity as a component involved in the expression of sexual behavior in romantic relationships. The current results highlight the importance of incorporating a broad social perspective in order to understand the expression of adolescent sexual behavior.

Keywords

Sexual behavior; Romantic couples; Religion; Adolescence

Introduction

The majority of US adolescents participate in religious groups or traditions, and religious beliefs are important agents for adolescents' sexual socialization (Cotton et al. 2010; Rostosky et al. 2003; Smith et al. 2002; Wallace et al. 2003). For instance, religiosity is

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associated with older age at first coitus (Rostosky et al. 2003), fewer sexual partners (Murray-Swank et al. 2005), and negative attitudes about premarital sex (Koenig 2001). Dyadic romantic relationships are important aspects of adolescent development and provide the principal social and interpersonal unit in which partnered sexual behaviors are experienced (Furman and Shaffer 2003). This suggests the potential importance of religiosity on sexual behavior within adolescent romantic partnerships, but this relationship is poorly understood. Because each dyad member brings specific religious beliefs and experiences into a relationship, *each* partner's perspectives contribute to the range of sexual behaviors that are enacted as a couple. Additionally, most research on adolescent sexual behavior addresses only specific sexual behaviors (e.g., coitus), with less attention given to the repertoire of sexual behaviors (e.g., holding hands, kissing, manual-genital contact, oral-genital contact) that occur within a given relationship (for exception, see Hensel et al. 2008). Therefore, our goal was to explore the role of each dyad member's religiosity on a broader range of sexual involvement within a given romantic partnership.

Adolescent Religiosity and Sexual Behavior

In general, greater adolescent religiosity (defined by frequency of engaging in religious/spiritual activities; McCree et al. 2003) is associated with later age of first coitus and fewer sexual behaviors such as intercourse without a condom and sexual intercourse with an unknown partner (Langer et al. 2001; Steinman and Zimmerman 2004). For instance in one study, age of first coitus was later for African-American female adolescents who reported high religiosity (McCree et al. 2003). Similarly, another found that adolescents who reported more frequent church attendance were more likely to delay first sexual intercourse (Jemmott et al. 1998). However, the association of religiosity with sexual outcomes is complex. For instance, religiosity has been associated with contraception non-use, although not consistently (McCree et al. 2003; Nonnemaker et al. 2003), and more recent research has found religiosity to be negatively related to sexual activity within imagined relationships but unrelated to the actual sexual and contraceptive behavior of adolescents (Leonard and Scott-Jones 2010).

Social influence is a proposed mechanism that describes the role of religion on sexual behavior (Perkins et al. 1998). For example, Regnerus and colleagues (2004) found that parents influenced the rates of church attendance, but peer influence was also important in subjective feelings of religious belief. Both peer and parental influences have been associated with delayed coitus (Nonnemaker et al. 2003), and increased number of friends who attended church has been related to later coital debut (Mott et al. 1996). Rostosky et al. (2004) concluded that the social support of peers who espouse delaying coitus is actually more important than church attendance as a predictor of adolescent sexual behavior. Romantic relationships are an understudied factor in religiosity and adolescent sexual behavior.

Previous theoretical work has found romantic partnerships to be natural extensions of adolescent peer relationships (Brown 1999; Connolly and Goldberg 1999). Friendships and romantic relationships offer opportunities for affiliation, social support, and intimacy (Connolly and Goldberg 1999). However, there are important differences between romantic relationships and friendships. For instance, sexual behavior is often enacted in romantic partnerships (Furman and Shaffer 2003). Romantic partnerships are also characterized by increased emotionality and the possibility of ending the relationship (breaking up), which adds to the relational stress noted in romantic partnerships (Fisher 2004). Given the unique role of romantic relationships, we expect relationship quality to influence the expression of sexual behavior within that relationship. Previous research has also shown that adolescent intimacy, or relationship quality, influences the expression of adolescent sexual behavior

(Aalsma et al. 2006). Similarly, we would expect that intimacy specific to the romantic partnership will influence sexual involvement.

Actor-Partner Interaction Model for Dyad Data

Religiosity is characteristic of an individual, and sexual interactions are characteristics of *pairs*. Thus, each individual's religiosity may be related to the couple's decisions about the types of sexual involvement within their relationship. A useful perspective for clarifying the role of dyad members can be found in the actor-partner interaction model (Kenny et al. 2006; Kenny and Judd 1996).

We explored 2 possible ways that individuals in a romantic relationship could influence the other: partner effects and mutual influence (Kenny and Judd 1996; Kenny et al. 2006). In the case of partner effects, the behavior of one partner influences the other. For example, traditional gender differences in power might lend preference to the male partner's religiosity in sexual decision making. Mutual influence occurs when each partner has a reciprocal effect on the other. For instance, partners in a mutually religious dyad could reciprocally reinforce decisions to engage in some sexual behaviors (such as holding and hands or kissing) and avoid others (such as breast or genital touching).

Summary

In this study, each dyad member's self-reported religiosity was used to predict the sexual involvement of the dyad. Integrating data from both partners allows us to test the relative importance of *individual* versus *dyad* religiosity in sexual behavior. Additionally, research of religiosity and adolescent sexual behavior tends to focus on coitus and prevention behaviors such as condom and contraceptive use. However, a substantial body of research demonstrates adolescent couples' engagement in a variety of sexual behaviors, including holding hands, kissing, manual-genital contact, and oral-genital contact (Hensel et al. 2008; O'Sullivan et al. 2007; Hennessy et al. 2008). Thus, a singular focus on coitus and risky sexual behavior is misleading since sexually involved couples who do not have coitus are misclassified as "not sexually active." Hence, we were interested in the following questions: (1) Is there an association between individual religiosity and sexual involvement? (2) If this relationship exists, is there also a dyad religiosity effect on sexual involvement? (3) Does a dyad member's religiosity remain important when other relationship factors (e.g., relationship quality) are incorporated into multilevel models?

Method

Data

The sample of adolescent dyads was drawn from Wave 1 of the National Longitudinal Study of Adolescent Health (Add Health). The basic design of the recruitment strategy of Add Health has been described in detail elsewhere (Udry and Bearman 1998). Briefly, a random sample of 80 high schools was selected based on (1) geographical region, (2) urbanicity, (3) school size, (4) school type, (5) percent white, (6) percent black, and (7) grade span. After the schools were selected, self-report questionnaires were administered on a single day. At that time, 90,118 adolescents completed the in-school questionnaire. Additionally, 20,745 adolescents from 132 schools were interviewed in their homes.

A unique feature of Add Health is that 14 schools were selected for the saturated sample (2,526 adolescents) in which all of the adolescents were enrolled to explore social networks. The participants were asked whether they "have had a special romantic relationship with anyone" in the last 3 months, and they could identify up to three romantic relationships. Items relating to the nature of their relationship(s) were asked, including items relating to

relationship quality and sexual behavior specific to each romantic partner. After the relationship section was completed, the participant searched the directory to highlight the name of their partner(s). Hence, partnerships were matched and information on the complete dyad was available.

For the purposes of this study, we assessed only reciprocated heterosexual romantic relationships in which both members identified the other person as a partner. We chose to use reciprocated partners to increase our confidence that the actual relationship(s) had existed. Individuals who were in more than one romantic relationship were excluded from the analyses. We retained romantic relationships in the order they were reported, which is a similar procedure used by other researchers utilizing the romantic partner database (Cleveland et al. 2003; Haynie et al. 2005).

Participants

Three hundred and seventy-four adolescent dyads (748 individuals) were identified. The age range was 11–19 years (mean = 15.7 years), with 68% of the participants self-identified as White and 11% of the participants self-identified as Black.

Individual Measures

Religiosity—Participants' religiosity scores were based on 3 items (α = .94). Items included the frequency of attendance at religious services, self-rated importance of religion, and the frequency of attendance at religious youth activities. Participants responded to a 4-point Likert scale ranging from 1 (never) to 4 (once a week or more) for attendance items and 1 (not at all important) to 4 (very important) for the importance of religion item (range = 4–12).

Relationship Quality (Within Dyad)—The participants were asked a series of questions that were specific to their relationship quality. Scores were based on 5 items (0 = no, 1 = yes). Items included "I gave my partner a present," "My partner gave me a present," "I told my partner I loved him or her," "My partner told me that he or she loved me," and "We thought of ourselves as a couple." Cronbach's alpha was 0.78 (range = 0–5).

Lifetime Number of Sexual Partners—Participants were asked how many sexual partners they had been with in their lifetime.

Sexual Involvement (Within Dyad)—Dyad members were asked to report (0 = no, 1 = yes) whether they had engaged in certain sexual behaviors with their reciprocated dyad members. The five behaviors assessed were holding hands, kissing, touching each other under clothes, touching each other's genitals, and engaging in coitus (range = 0–5). Table 1 shows the distribution of sexual behaviors by total score on the sexual involvement scale. Low scores commonly include behaviors such as holding hands and kissing, while high scores are much more likely to include touching each other's genitals and coitus.

Statistical Methods

The dyad-specific sampling weight was computed using the two basic formulas for computing the initial pair weight (Chantala 2001). The design variables, error terms, and correlation structure of the data are automatically incorporated by SUDAAN PROC MULTILOG to generate accurate variance estimates and significance levels (Chantala and Tabor 1999).

After incorporating the above weights, analyses were conducted using a multilevel modeling program, SAS PROC MIXED. Conducting a multilevel analysis allows the examination of

observations or data points that are “nested” within a specific structure; in this case, “nesting” is of individuals within a specific romantic relationship. A strength of utilizing multilevel modeling for dyadic data is that it is possible to assess both individual (actor) and dyadic influences on the outcome. These models are created by sequential addition of predictors, with the examination of statistical significance of the predictors as well as changes in model fit. Improvements in fit were assessed by the examination of the change in the Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC). Both are useful when comparing alternative models, and smaller values indicate better model fit (Raftery 1995; Singer and Willett 2004).

In the current study, we assessed religiosity, lifetime number of partners, relationship quality, and sexual involvement. For the purposes of our analyses, we used several dyad variables that were derived from the individual measures (Campbell and Kashy 2002). They included Dyad Religiosity, Religious Dissimilarity, Dyad Relationship Quality, Relationship Quality Dissimilarity, Gender × Actor Religiosity, and Gender × Actor Relationship Quality. The dyad scores were calculated as the product of actor and partner scores (Religiosity and Relationship Quality). Accordingly, higher scores on this measure indicated greater religiosity of the dyad. The dissimilarity scores were calculated as the absolute difference between the actor and partner scores (Religiosity and Relationship Quality). On this scale, higher scores indicated greater dissimilarity on religiosity between dyad partners. Our analyses included a Gender × Religiosity and Gender × Relationship Quality interaction term, which allowed us to test the role of gender on the association between religiosity/relationship quality and sexual involvement.

Results

Sample Comparison

To assess the comparability of the sample with the larger Add Health sample, we compared variables such as age, religiosity, lifetime sexual partners, and race. Women and men (374 dyads; 748 individuals) in the reciprocated romantic dyad database were compared with the other women (3,317 individuals) and other men (4,181 individuals), respectively. Men who were in reciprocated romantic dyads were significantly older than those who were not (15.8 years compared to 15.1 years; $P < 0.05$ by t test), and the same was true for romantically involved women (15.3 years compared to 14.8 years; $P < 0.05$ by t test). No significant differences were noted for race, religion, or lifetime number of partners. This table is available upon request.

Table 2 includes the means, standard deviations, and the within-dyad correlation between partners on each of the variables of interest. Although female partners reported (on average) greater religiosity than men, there was a significant within-dyad correlation of religiosity. No significant difference between females’ and males’ relationship quality or sexual involvement was noted, but there were significant within-dyad correlations for each. Finally, men reported a greater number of lifetime sexual partners compared with women, but the within-dyad correlation was not significant.

Table 3 includes male and female bivariate correlations between the included items and measures. Sexual involvement was significantly related to religiosity for men and women. A significant correlation, for men and women, was also noted between sexual involvement and relationship quality.

As stated earlier, we conducted a series of four multilevel analyses (see Table 4). Through this procedure, we were able to show the relative change in the fit indices (AIC and BIC) and compare changes in the measures between the specific models. The first model assessed

the relationship between actor religiosity and sexual involvement. Age (beta = 0.22; P = 0.001) and actor religiosity (beta = –0.05; P = 0.05) were significantly related to sexual involvement.

The second model included dyad religiosity interaction terms. Age (beta = 0.21; P = 0.01) and dyad religiosity (beta = –0.02; P = 0.05) were significant. We created a figure to display this interaction term (see Fig. 1) as recommended by Aiken and West (1991). This figure displays the change in sexual involvement based on the interaction between actor and partner religiosity. Dyad dissimilarity was not significantly related to sexual involvement. There was a slight increase in the AIC and BIC from Model 1 to model 2.

The third model assessed religiosity in addition to variables associated with adolescent sexual involvement. Age (beta = 0.12; P = 0.05), actor religion (beta = –0.07; P = 0.05), actor relationship quality (beta = 0.56; P = 0.001), and actor lifetime number of sexual partners (beta = 0.01; P = 0.05) all predicted sexual involvement. The AIC and BIC goodness-of-fit indices decreased by more than 500 compared with the other models. Raftery (1995) indicated a change of over 10 to be “very strong.” Actor relationship quality, in particular, resulted in a large decrease in the AIC and BIC fit indices.

The fourth model included actor religiosity, partner religiosity, relationship, and sexual behavior measures, as well as dyad religiosity measures. Significant predictors of sexual involvement included age (beta = 0.12, P = 0.05), actor relationship quality (beta = 0.57, P = 0.001), actor lifetime sexual partners (beta = 0.02, P = 0.05), and partner lifetime sexual partners (beta = 0.02, P = 0.05). Dyad religiosity was not significantly associated (beta = 0.01, P = 0.06) with sexual involvement. No other dyad measures were significant predictors of sexual involvement. The AIC fit index was substantially higher in comparison with the third model (Individual full model).

Discussion

Our aim in conducting the present study was to evaluate both individual- and dyad-level effects of religiosity on sexual involvement. We will focus the following discussion on the role of individual and partner religiosity on sexual involvement, clarify the role of relationship quality on sexual involvement, and discuss the limitations of this study.

Consistent with previous research (Rostosky et al. 2003; Smith et al. 2002; Wallace et al. 2003), we found that an individual's religiosity was related to their reports of sexual involvement. However, our results extend individual research in this area in two important ways. First, religiosity predicts a broad range of sexual behaviors, not only transition to first coitus, sex without a condom, or risky sexual behavior. Hence, religiosity is not only associated with specific, important transitions in sexual behavior, but also on the expression of non-coital behavior such as holding hands and kissing. Secondly, our results underscore the importance of measuring an array of sexual behaviors. This may seem like a minor issue, but we feel it is important to understand the full development of romantic relationships in adolescence. For instance, 36% of the individuals in this study report a sexual involvement score of 2 or less (see Table 1). By focusing only on genital touching or coitus, we would be ignoring a substantial amount of variation in adolescent romantic behavior.

We found limited support for a dyad effect of religion on sexual involvement. A dyad effect was significant in the Dyad religion model (see Table 4). Figure 1 shows the interaction between actor and partner religiosity on sexual involvement. This suggests that religiosity within dyads influences sexual involvement more than the independent contributions of each dyad partner. However, the effect of dyad religiosity became non-significant (albeit at a P < 0.06 level) when other actor and partner measures are included. In particular, both actor

relationship quality and actor/partner lifetime sexual behaviors exerted independent effects on sexual involvement. Our conclusion is that actor religiosity is important in predicting sexual involvement, and the importance of dyad religiosity is limited, or perhaps specific to, the developmental course romantic relationships.

This then leads us to the question of how adolescent romantic relationships develop over time. Assortative pairing prior to the formation of romantic dyads is a possible explanation for the loss of significance when relationship quality is added to dyad religion. Perhaps religiosity is an important element for certain adolescents when they are selected into a relationship and begin dating. Then, as the relationship develops over time, relationship quality and closeness become the driving force in how sexual behavior is expressed in the relationship. Strong conclusions cannot be drawn as the findings are limited by the cross-sectional nature of the data. Additionally, the developmental nature of religiosity means that changes in religiosity over time could have an effect on sexual involvement. Recent research exploring the role of religiosity and sexual behavior found that sexual activity within adolescent romantic relationships is considered to be more acceptable than sexual activity outside of an adolescent romantic relationship (Leonard and Scott-Jones 2010). This association becomes even more complex when dyadic effects are considered.

Relationship quality is one of the most often cited predictors of sexual behavior in adulthood and adolescence (Rostosky et al. 2000; Lahey et al. 2000; Miller and Benson 1999). This is evident from both the correlational research and multilevel models in this study. The correlation between the two is strong, and model fit improves significantly when relationship quality is entered into the model. Notably, actor relationship quality, rather than partner-level or dyad-level relationship quality, was related to sexual involvement. This suggests that the subjective individual experience of a relationship is perhaps of greater importance for sexual behavior than the shared experience. It is interesting to note the insignificant beta coefficient between partner relationship quality and sexual involvement (See Dyad Full Model, Table 4). Although relationship quality is assumed to be impacted by the behaviors of the other person, its role on sexual involvement appears to be influenced by the perceptions of the individual.

Lastly, consistent with previous research (Miller and Stark 2002), women in our study evidenced higher rates of religiosity than men (see Table 2). However, gender was not significantly related to the expression of sexual behavior in the studied romantic relationships. Moretti et al. (2004) indicated that female behavior may be more influenced by romantic relationships than male behavior, but the study focused on the expression of aggression. Research has also demonstrated that women can influence male partner behavior (Homish and Leonard 2005). However, much of the research has been with married couples (see Labouvie 1996), which function differently than adolescent romantic relationships. Hence, the lack of effect in our study may be due to the developmental nature of adolescent romantic relationships. It is recommended that longitudinal research methodology be utilized in the future in order to understand the role of gender and religiosity on the expression of sexual behavior.

Limitations

There are several limitations that impact the interpretation of this study. One limitation includes utilizing a select sample. As described earlier, individuals in the current study were identified from the saturated school sample (2,456 participants), with 748 individuals identified as being in a romantic partnership. Although the number of participants was reduced in comparison with the broader sample, in general, they did not differ from the broader sample. As noted in the results, individuals in romantic partnerships were older, which is consistent with romantic relationship development (Furman and Wehner 1997).

It is possible to assess the multiple waves of data through the Add Health project. However, the number of romantic partnerships that remain in the same relationship drops significantly. In fact, the majority of adolescents (80%) who were in a reciprocated romantic partnership at Wave 1 were no longer in the same relationship at Wave 2, which occurred 1 year later. Therefore, in order to maximize power in this study, we utilized the cross-sectional database.

Lastly, there were 2 specific problems with measurement. First, our sexual involvement measure did not assess oral-genital contact because it was not included in Add Health. Hence, an important non-coital sexual behavior was not included in this analysis. Secondly, we were unable to measure relationship duration. Although an item regarding duration was assessed, we found that this information was missing for over 30% of the participants.

Future Directions

We recommend that future research explores the role of assortative mating and partner effects as it relates to religiosity in adolescent romantic partnerships. It will be important to prospectively assess entry into romantic partnerships. By prospectively assessing romantic relationship development, it will also be possible to measure the development of a broader range of affiliative and sexual behaviors. Oversampling or specifically enrolling adolescents from church-based or church-related youth groups will aid in understanding the developmental trajectories of religion and sexual involvement within adolescent romantic relationships.

Conclusions

The importance of religiosity, both actor and partner, is evident in this study. However, when we assess actor and partner lifetime number of sexual partners and relationship quality, a more complex relationship emerges. These results point to the importance of taking a broad social perspective on adolescent sexual behavior. For instance, we believe a developmental perspective on romantic relationships should address precipitating assortative mating patterns (such as religiosity) as well as interpersonal relational patterns (such as relationship quality). Behavioral interventions that take into account precipitating assortative mating and interpersonal patterns will be best suited to impact adolescent sexual behavior.

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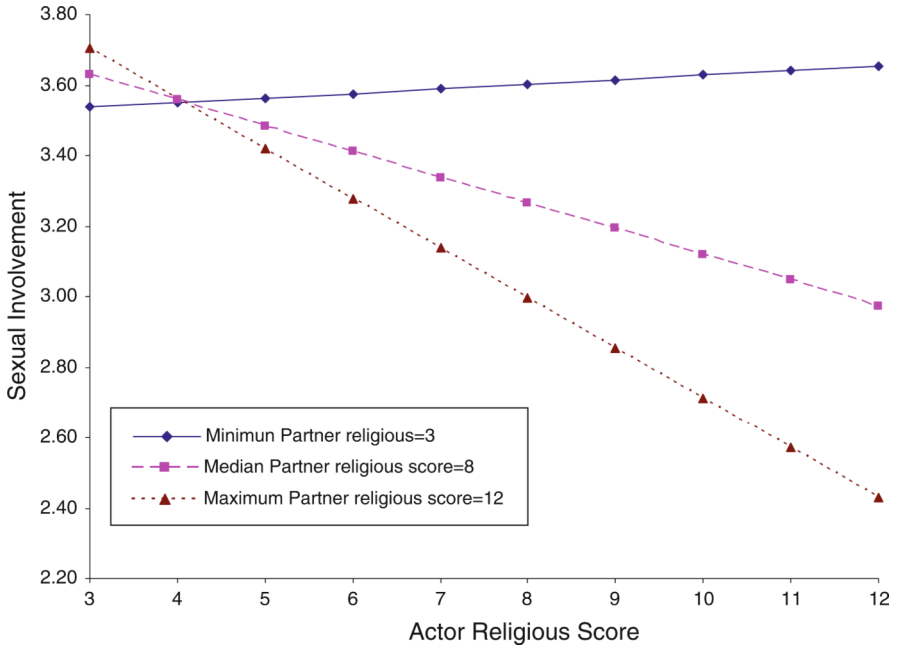

Fig. 1.
Dyad religiosity interaction effect on sexual involvement based on multilevel model

Table 1

Sexual involvement scale

Item	Score = 1 *n* = 26 3%	Score = 2 *n* = 166 22%	Score = 3 *n* = 61 8%	Score = 4 *n* = 158 21%
We held hands	16 61%	162 97%	57 93%	138 87%
We kissed	6 23%	161 97%	61 100%	157 99%
Touch each other under our clothing or with no clothes on	–	7 4%	48 78%	155 98%
We touched each others' genitals (private parts)	3 11%	–	11 18%	146 92%
We had sexual intercourse	1 3%	2 1%	6 9%	36 22%

Eight-three (11% of sample) reported a score of 0; 254 (34% of sample) reported a score of 5

Table 2

Means, standard deviations, dyad differences, and intercorrelations at the dyad level

Measure	Women[a] (*n* = 374)	Men[a] (*n* = 374)	Paired *t* test (*n* = 748)	Within-dyad correlation
Religiosity	7.91 (2.87)	7.34 (2.98)	–3.25**	0.34**
Relationship Quality	3.98 (1.65)	3.86 (1.83)	–1.22	0.32**
Lifetime number of sexual partners	1.01 (2.64)	2.71 (6.94)	4.47**	0.02
Sexual involvement	3.19 (1.65)	3.34 (1.73)	1.41	0.23**

[a]Means and standard deviations

**$P < .01$

Table 3

Intercorrelations among measures at for men and women

Measures	1	2	3	4	5	6	7	8
1. Sexual involvement (F)		.23**	–.14**	–.17**	.64**	.18**	–.03	.08
2. Sexual involvement (M)			–.12*	–.14**	.19**	.74**	–.01	.10*
3. Religiosity (F)				.34**	.01	–.04	–.12*	–.02
4. Religiosity (M)					–.06	–.01	.01	–.07
5. Relationship quality (F)						.32**	–.21**	–.01
6. Relationship quality (M)							–.12*	.01
7. Lifetime sexual partners (F)								.01
8. Lifetime sexual partners (M)								

*$P < .05$

**$P < .01$

Table 4

Multilevel models to test individual and partner effects on sexual involvement

Measures and fit indices of participants	Individual religion model	Dyad religion model	Individual full model	Dyad full model
Intercept	0.11 (0.77)	–0.69 (0.93)	–0.70 (0.55)	–1.06 (0.69)
Gender	–0.06 (0.32)	–0.02 (0.32)	–0.22 (0.28)	–0.17 (0.28)
Race	–0.04 (0.14)	0.03 (0.14)	–0.10 (0.10)	–0.09 (0.10)
Age	0.22 (0.04)**	0.21 (0.04)**	0.12 (0.03)**	0.12 (0.03)**
Actor religiosity	–0.06 (0.02)**	0.14 (0.09)	–0.07 (0.01)**	0.04 (0.06)
Partner religiosity		0.14 (0.03)		0.09 (0.06)
Actor relationship quality			0.56 (0.03)**	0.57 (0.07)**
Partner relationship quality				–0.04 (0.07)
Actor lifetime sexual partners			0.01 (0.00)*	0.02 (0.01)**
Partner lifetime sexual partners				0.02 (0.02)**
Gender X actor religiosity interaction	0.01 (0.03)	–0.01 (0.03)	0.01 (0.02)	0.01 (0.02)
Gender X actor relationship quality interaction			0.04 (0.04)	0.04 (0.03)
Dyad religiosity		–0.02 (0.01)*		–0.01 (0.01)#
Religiosity dissimilarity		–0.05 (0.04)		–0.03 (0.03)
Dyad relationship quality				–0.01 (0.02)
Relationship quality similarity				–0.03 (0.06)
AIC	2,874.6	2,879.0	2,364.7	2,482.4
BIC	2,882.5	2,886.8	2,372.5	2,390.2

*Beta coefficients and standard errors reported

#$P < .06$

*$P < .05$

**$P < .01$