

Partner Age Differences, Educational Contexts And Adolescent Female Sexual Activity

By Sarah Koon-Magnin, Derek A. Kreager and R. Barry Ruback

Sarah Koon-Magnin is doctoral candidate, Derek A. Kreager is assistant professor and R. Barry Ruback is professor, all with the Department of Sociology and Crime, Law and Justice, Pennsylvania State University, University Park.

CONTEXT: Research suggesting that female teenagers who date substantially older males are at increased risk for negative health outcomes supports the need for statutory rape laws. However, prior research has generally ignored the social context of adolescence when examining the risks associated with dating an older partner.

METHODS: Data from Waves 1 (1995) and 2 (1996) of the National Longitudinal Study of Adolescent Health were used to model the occurrence of sexual intercourse within adolescent heterosexual romantic relationships. Logistic regression analyses were used to examine the predictors of sexual intercourse among 4,266 romantically involved female students aged 12–18.

RESULTS: Female students with male partners three or more years their senior had higher odds of engaging in sexual intercourse than female students with partners closer to their age (odds ratio, 1.5). However, the association between having an older partner and the risk of sexual intercourse was nonsignificant for females older than 16. Moreover, when male partners' school status was taken into account, the relationship was no longer significant. Female students with partners who had exited school had elevated odds of having had intercourse compared with females who dated partners in the same school (1.8).

CONCLUSIONS: These findings challenge statutory rape laws' focus on age, given that the association between educational context and sexual risk overrides the association between partner age and sexual risk.

Perspectives on Sexual and Reproductive Health, 2010, 42(3):206–213, doi: 10.1363/4220610

Romantic relationships involving female teenagers and substantially older male partners have been long-standing concerns for both policymakers and the general public.^{1,2} Because of perceived power imbalances, these relationships are commonly defined as “predatory” and harmful to young women’s health and sexual development. Research generally supports such views, finding that female teenagers who are romantically involved with older males are at greater risk for a variety of negative health outcomes—including early sexual intercourse, unprotected sex, STDs and pregnancy—than are their peers dating similarly aged males.^{3–5} Typically missing from these studies, however, is consideration of the social contexts of adolescent romance, including whether both partners are enrolled in the same school. In the current study, we challenge the focus on age found in current statutory rape legislation and suggest that educational context may be more important than age asymmetry in predicting adolescent female sexual activity—specifically, that young women dating older males who are still in secondary school are at less risk of sexual intercourse than female teenagers dating males who do not attend school, regardless of the males’ ages.

STATUTORY RAPE LEGISLATION

Every state has a statutory rape law prohibiting sexual activity involving at least one partner who is younger than the state-defined age of consent.⁶ Thirty-one states define

the legal age of consent as 16, but seven set it at age 17, and 12 at age 18. Congress bolstered statutory rape laws with the 1996 federal welfare reform act, calling upon states to develop and enforce a “strategy to combat teenage pregnancy . . . including statutory rape culpability and prevention.”⁷ States responded by increasing the severity of punishment for statutory rape offenses;⁸ many classified statutory rape as a Megan’s Law offense that requires convicted perpetrators to register as lifetime sexual offenders.

Efforts to “get tough” on statutory rape offenses were galvanized by studies showing that the majority of America’s teenage births involve adult fathers.⁹ Later research, however, suggested that the birth statistics quoted in these studies were generally overestimated.^{10,11} For example, one study found that once married and older teenage females (i.e., 18–19-year-olds) were removed from national estimates, only 21% of teenage births involved substantially older male partners.² Another study found that only 6% of sexually active women aged 15–17 had male partners six or more years their senior.¹² Such findings suggest that the overwhelming majority of teenage sexual activity occurs between similarly aged peers.

For this reason, legislators have increasingly recognized the need to distinguish high-risk teenage sexual relationships from less harmful, normative sexual behaviors.⁶ Many states have decriminalized sexual activity between teenagers if their ages differ by less than the state-defined

age span, even if one or both partners are younger than the age of consent. This addition to statutory rape law acknowledges that consensual sexual activity between minors is less likely to be predatory or coercive than that involving a minor and a substantially older adult.⁶ However, defining the age of consent and the age span between partners remains a fairly arbitrary process that varies considerably across states. Only recently has scientific research begun to address these issues,⁴ and little consensus exists regarding the age parameters at the heart of statutory rape laws.

To inform policy and improve understanding of adolescent sexual risk, this study uses a sample of romantically involved adolescent females from the National Longitudinal Study of Adolescent Health (Add Health) to examine the associations between age, partner age difference and females' risk of having sexual intercourse. In particular, we explore whether there is an age at which the sexual risks of adolescent females dating an older partner are no different from those of adolescent females dating a same-age peer, suggesting an appropriate age of consent. In addition, we examine whether the social context of adolescence overrides the association between age and sexual behavior. For example, does a romantic relationship between a 14-year-old female high school student and an 18-year-old male high school student entail the same risk of sexual intercourse as a relationship between the same female and a male high school graduate or dropout? Dissimilar educational contexts, and not age asymmetries, may be primary indicators of high-risk dating relationships. Understanding such nuances should not only inform sex-related policies, but also contribute to our understanding of adolescent sexual development.

AGE AND SEXUAL RISK

Supporting the need for statutory rape legislation, findings generally indicate that when compared with female teenagers dating similarly aged partners, those with older male partners are at greater risk for negative sexual experiences.⁴ One study, using a sample of romantically involved Add Health females, found that young women with a partner six or more years older were at significantly greater risk of having sexual intercourse in the relationship than were young women involved with a male closer to their age.¹ This association was greatest for the youngest females in the sample (those aged 11–13), whose odds of having sex with a partner six or more years older were six times those of having sex with a similarly aged partner. For the oldest females in the sample (those aged 17), the odds of intercourse were doubled in relationships involving men six or more years older. These findings suggest that the sexual risk associated with dating an older partner decreases as females age, but the risk remains even among the oldest group. However, a six-year difference in partners' ages is substantially higher than the age span typical of statutory rape definitions (i.e., 2–4 years). A six-year cutoff therefore excludes many age-asymmetric relationships that

are legally defined as statutory rape but ambiguous with regard to their risk.

Another study found that of 146 ninth-grade females, those who dated a male three or more years older were at significantly greater risk of sexual intercourse in the relationship than were those who dated a male closer to their age.¹³ In addition, consistent with public perceptions and prior research of the predatory nature of age-asymmetric relationships,¹⁴ the study found that relationships with older males were positively associated with adolescent females' reports of sexual coercion.¹³

Although suggestive, research on partner age difference and teenage female sexual outcomes is limited in two related ways. First, it has not adequately assessed the age at which adolescent females are at greatest risk of sexual intercourse with older male partners, or whether and at what age this risk attenuates. Addressing this question provides information that is important for establishing the appropriate age of consent. Second, to our knowledge, only one prior study has acknowledged the importance of partner age, social context and adolescent reproductive health.¹⁵ Ford et al. found that the less similar teenagers were to their partners in age, grade level or educational institution, the less likely they were to use contraceptives. However, their study focused exclusively on sexually active youth and did not address the association between educational context and the risk of engaging in sexual intercourse.

We argue that the age-graded institution of secondary education presents a unique environment in which 14-year-olds and 18-year-olds have regular contact, despite differences in their legal statuses as defined by most statutory rape legislation. Day-to-day interactions in the lunchroom, on playing fields or in classes may reduce the salience of age distinctions, and the norms of adolescent sexual activity may be inconsistent with the distinctions recognized by statutory rape legislation. In other words, the partners may perceive themselves as peers in the shared developmental context of high school, even if they are not defined as peers under the law. If, as most state laws appear to assume, sexual relationships between same-age peers are less harmful than relationships with large age differences between partners, then relationships involving same-context peers may also be less harmful than relationships in which partners do not share a social context.

The introduction of age spans in statutory rape laws in nearly every state comes from the assumption that coercion is less likely to take place in relationships involving same-age peers.⁶ We suggest that in a similar fashion, asymmetry in school status may overshadow age differences between partners. Indeed, from the perspective of a male partner enrolled in school, getting a young woman pregnant or coercing her to have intercourse may be perceived as jeopardizing both his future attainment and his social reputation. Males who have dropped out or graduated may be less likely to perceive such negative consequences. Furthermore, enrolled males are more likely to

be monitored by their parents than are their nonenrolled peers.¹⁶ Parental sanctions and monitoring may limit the sexual opportunities of female teenagers with older boy-friends who are enrolled in school. Finally, males who exit school early may be more likely than others to exhibit individual characteristics, such as low self-control, that increase the risks of both dating a younger female and having sexual intercourse.^{17,18}

Ninety-five percent of statutory rape offenders charged between 1996 and 2000 were male, and more than half of male offenders were aged 20 or younger.¹⁹ Specifically, 16% were aged 15–17, and another 36% were aged 18–20. These findings suggest that parents, law enforcement officials and prosecutors are not afraid to penalize older adolescent males who are sexually involved with younger females. Empirically assessing whether adolescent statutory rape offenders pose significant risks to younger females thus remains a critical research question.

METHODS

Data

We tested our hypotheses with data from Waves 1 and 2 of Add Health.* Add Health is a school-based, nationally representative survey of U.S. adolescents enrolled in grades 7–12 in the 1994–1995 school year. In Wave 1, a stratified sample of 20,745 students in 132 middle and high schools completed detailed in-home interviews from April to December 1995. Approximately one year later, 13,568 Wave 1 respondents who had not yet graduated from high school (88% of those eligible) were reinterviewed in their homes for Wave 2.²⁰ During both interviews, sensitive questions (e.g., about their romantic and sexual behaviors) were asked using laptop computers and audio computer-assisted self-interview technology.

We limited our analyses to 4,266 adolescent females who completed Waves 1 and 2, were enrolled in secondary school and had Wave 2 sampling weights necessary for regaining national estimates, reported having had at least one heterosexual romantic relationship in the 18 months prior to Wave 2 and reported the age of their partner. We excluded romantic relationships in which either partner was younger than 12 or the female was older than 18.

Measures

We created a binary outcome of sexual intercourse based on data from the Wave 2 interview. Respondents were asked if they had had a “special romantic relationship” in the previous 18 months. Those who answered affirmatively then identified up to three romantic partners and

were asked detailed questions about each partner and relationship. We constructed the dependent variable from the most recent romantic relationship reported by the respondent.

To detail their romantic relationships, respondents were provided a set of 15 cards on a laptop computer; each card captured an event that may occur in a dating relationship. Respondents were asked to delete the cards reflecting events that had not occurred in their relationship and to arrange the remaining cards in the order in which the events had occurred. Sexual intercourse was coded as 1 if a respondent retained the card that read “You had sexual intercourse,” and answered affirmatively a follow-up question, “When you had sexual intercourse with [partner], did he insert his penis into your vagina?” The variable was coded as 0 if the respondent rejected the card or answered no to the follow-up question.

We constructed our primary independent variable, partner age difference, from the romantic relationship section of the Wave 2 survey. Partner age differences were calculated by subtracting the partner’s age from the respondent’s age, both as measured at the beginning of the relationship. We then created a dummy variable for relationships in which the partner is more than three years older than the respondent. The reference category consists of respondents whose partners were within three years of their age.

To test if social context mediates partner age differences, we introduced a measure of partner’s social context from respondents’ reports of their partner’s educational status. This resulted in four mutually exclusive categories: in the same secondary school (i.e., middle or high school) as the respondent (the reference category), in a different secondary school, not in school or attending college.

We also controlled for two other relationship characteristics. We measured relationship duration as the number of years from the relationship’s beginning date to its ending date or, if it was ongoing, to the survey date. Several respondents reported very long relationships, so to reduce the influence of these outliers on parameter estimation, we used four years, which is approximately three standard deviations above the mean, as the maximum duration. We also included a control variable indicating whether relationships were ongoing at the Wave 2 interview.

We controlled for a variety of individual characteristics (as measured at Wave 1) that likely are correlated with sexual behavior and partner age, and therefore may account for any associations between sexual intercourse and characteristics of the partner. As several of the younger and older ages are underrepresented, we created four age categories with adequate variation for statistical analysis (ages 12–13, 14–15, 16 and 17–18). Age 16, the modal age of consent across states, is our reference category. In additional analyses (not shown), we also tested alternative age categorizations and found similar results.

We constructed four dummy variables for respondents’ self-reported “best” racial categorization: white (reference group), Hispanic, black and other race. Intact family

*We did not use Wave 3 of Add Health for three reasons. First, individuals at risk for statutory rape range from 12 to 18 years old, depending on the state; by Wave 3, our sampled respondents were 18–24 years old. Second, the coding of relationship characteristics varies substantially from Waves 1 and 2 to Wave 3, making comparisons between these waves difficult. Finally, our focus is enrolled youth; the overwhelming majority of respondents were enrolled at Waves 1 and 2, but many had exited school by Wave 3.

indicates that respondents lived with both biological parents. Family socioeconomic status captures parents' educational and occupational attainment, and is coded from 0 (indicating that both parents have no formal education or employment) to 10 (at least one parent has a postgraduate degree and professional employment).²¹ Frequency of drunkenness is determined by the question "Over the past 12 months, how many times have you gotten drunk or 'very, very high' on alcohol?" Responses ranged from 0 ("never") to 7 ("every day or almost every day"). Physical development was measured with a single subjective measure, "How advanced is your physical development compared with other girls your age?" Responses were on a five-point Likert scale (1="I look younger than most" and 5="I look older than most"). Religiosity is taken from the item "How important is religion to you?" Responses were on a four-point scale (1="not important at all" and 4="very important"). Closeness to parents captures respondents' answers to the questions "How close do you feel to your mother/father?" Responses were on a five-point Likert scale (1="not at all" and 5="very much"). Respondents living with only one parent contributed only one value to this variable. College aspirations were measured from the question "On a scale of 1 to 5, where 1 is low and 5 is high, how much do you want to go to college?"

Sexually experienced females may select into age-asymmetric partnerships and be at greater risk than others of sexual intercourse. Therefore, we included a measure of sexual history, the total lifetime number of sexual partners (both romantic and nonromantic) reported at Wave 1. As this measure had several extreme outliers, which may have influenced parameter estimation, we capped the number of partners at 10, approximately three standard deviations above the mean. Finally, we created an indicator for respondents who reported being married at Wave 2. Marriage may create a spurious relationship between partner's age and sexual intercourse, as married female students may have older spouses, and sexual intercourse within these relationships would be normative and not subject to statutory rape legislation.

Analyses

Our primary analyses proceeded in three stages. First, we replicated prior research by examining the association between engaging in sexual intercourse and having a substantially older male partner. Second, we tested whether this association varies by the respondent's age, thus providing clues for the appropriate age of consent. Third, we focused on the school status of the partner, assessing sexual risk by whether the partner is enrolled in school. Here we also tested whether the partner's school status explains the association between engaging in sexual intercourse and having an older partner.

We employed survey-adjusted, multivariate logistic regression models to predict our binary outcome of female sexual intercourse. This approach addresses observational dependence within nested data and stratified sampling

designs. Observational dependence occurs in Add Health because of error correlation between respondents attending the same school, which could result in inefficient parameter estimates if not corrected. Poststratification weights correct for Add Health's oversampling of special populations (e.g., disabled and ethnic samples) and for attrition between survey waves to regain nationally representative estimates.²⁰ We also calculated the predicted probabilities of females' having sexual intercourse by the female's age and the couple's age difference. For our key variables, we used the estimates from model 2 of our logistic regression and held all other covariates at their means.

To maintain statistical power for our analyses, we imputed missing values for our independent variables. Eight percent of cases had missing values on one or more independent variable. The variables affected most by missing data were relationship duration (4%), family socioeconomic status (2%) and parental attachment (2%). Rather than delete cases with missing values, we imputed values into five data sets using the user-written ICE²² and MIM²³ commands available in Stata version 9.2. All covariates were included in the imputation procedure, and we did not impute values for our dependent variable.

Following our primary analyses, we conducted two additional tests of the association between social context, partner age and adolescent female sexual risk. First, we tested if the association between sexual intercourse and dating an older partner varies significantly by state. These analyses explore whether state heterogeneity in statutory rape laws is warranted and hint at the potential deterrent effect of these laws for sexual behavior. For confidentiality reasons, Add Health did not release state identifiers. However, one can use state-level demographic characteristics to nest respondents within states without identifying the states by name. We located a state-level variable (proportion of state government direct general expenditures that went to education) that was measured to the 10th decimal place and was unique to any given state. According to this measure, 4,256 young women were nested in 33 states. We then estimated a hierarchical logistic regression of sexual intercourse using HLM software, version 6.0.²⁴

Finally, to determine if results are consistent across male and female self-reports, we compared rates of sexual activity in two groups of romantically involved 17–18-year-old males attending the same schools as their partners: 41 whose partners were three or more years their junior and 326 whose partners were closer to their age.

RESULTS

In our sample, 47% of respondents reported sexual intercourse in their most recent romantic relationship (Table 1, page 210). Fifteen percent reported that their most recent male romantic partner was more than three years older than them. Respondents reported that the majority of their partners were school-enrolled (65% in the same school, 27% in a different school, 8% in college). However, 16% of respondents reported romantic partners who had either

TABLE 1. Selected characteristics of adolescent females in heterosexual romantic relationships, Waves 1 (1995) and 2 (1996) of the National Longitudinal Study of Adolescent Health

Characteristic	% or mean (N=4,266)
Dependent variable‡	
Sexual intercourse in relationship	46.5
Individuals	
Age at start of relationship	
12–13	15.8
14–15	44.6
16	20.9
17–18	18.7
Race/ethnicity	
White	71.8
Hispanic	10.5
Black	13.9
Other	3.8
Intact family	
Mean family socioeconomic status (range, 0–10)	5.8 (2.5)
Mean frequency of drunkenness (range, 1–7)	1.7 (1.2)
Mean physical development (range, 1–5)	3.4 (1.1)
Mean religiosity (range, 1–4)	3.0 (1.0)
Mean closeness to parents (range, 1–5)	4.5 (0.6)
Mean college aspirations (range, 1–5)	4.5 (1.0)
Mean no. of prior sexual partners (range, 0–10)	1.1 (2.5)
Married‡	1.4
Partner/relationship‡	
Mean relationship duration (yrs.; range, 0–4)	0.9 (0.9)
Current relationship	54.0
Partner's age difference	
≤3 yrs.	84.7
>3 yrs.	15.3
Partner's school status	
Same secondary school	64.6
Different secondary school	27.4
College	8.0
Not in school	15.5

‡At Wave 2. §At Wave 1. Notes: Unless otherwise noted, data are percentages. Figures in parentheses are standard deviations.

dropped out of high school or graduated without matriculating to college.

Primary Analyses

Looking at the associations between sexual intercourse and respondents' reports of background, relationship and partner age difference variables, we find that adolescent females' risks of sexual intercourse in a romantic relationship are monotonically associated with age; 12–13-year-olds' odds of having had intercourse are 73% lower than 16-year-olds' (Table 2, model 1). Additionally, compared with white females, Hispanics are significantly less likely to have had sex in a romantic relationship (odds ratio, 0.7), whereas blacks are significantly more likely to have done so (1.4). Not surprisingly, having an intact family is associated with reduced odds of teenage female sexual intercourse (0.7); the odds of having had sexual intercourse are also reduced as family socioeconomic status, religiosity and college aspirations increase (0.8–0.9). On the other hand, being involved in an ongoing romantic relationship is positively associated with the odds of sexual intercourse, as are relationship duration, frequency

of drunkenness and level of physical development (1.2–2.5). Sexual history also has a positive association with intercourse: For each prior sexual partner reported, the odds that females had had intercourse increased by 48%. Model 1 also suggests that dating a substantially older male partner is associated with increased odds of sexual intercourse (1.5).

Model 2 adds interaction terms between the age categories and the older male partner variable. The sexual risk associated with having an older partner is not significantly different between the 12–13-, 14–15- and 16-year-old age categories. In contrast, the sexual risk associated with having an older partner is attenuated for older adolescent females. Compared with 16-year-olds with an older partner, females aged 17–18 have lower odds of intercourse (odds ratio, 0.3). Indeed, the main effect (1.9) and interaction term for 17–18-year-olds together suggest that young women in this age category are less likely to have had intercourse with an older partner than with a partner closer to their own age.

The probability that 17–18-year-olds with substantially older partners have had sex is about 10 percentage points lower than the probability that comparable 16-year-olds have done so (Figure 1). Thus, the sexual risks associated with having older male partners appear to subside after young women pass the age of 16.

In model 3, the focus is on the association between partner's school status and the risk of sexual intercourse in a romantic relationship. We see that compared with dating someone attending the same middle or high school, dating someone who has exited school is associated with having had sex in that relationship (odds ratio, 1.8). In addition, dating a male in college is marginally associated with elevated odds of sexual intercourse (1.4). Together with the null finding for dating a partner in a different secondary school, these results suggest that a shared context of secondary education is associated with a reduced risk of adolescent sexual intercourse. Moreover, when partner's school context is taken into account, having an older partner is no longer associated with sexual intercourse. This suggests that the association between partner's school status and sexual risk is stronger than the association between partner age and sexual risk. Dating a partner enrolled in secondary school is associated with a lower risk of sexual intercourse than dating an out-of-school or college male, regardless of the partner's age.

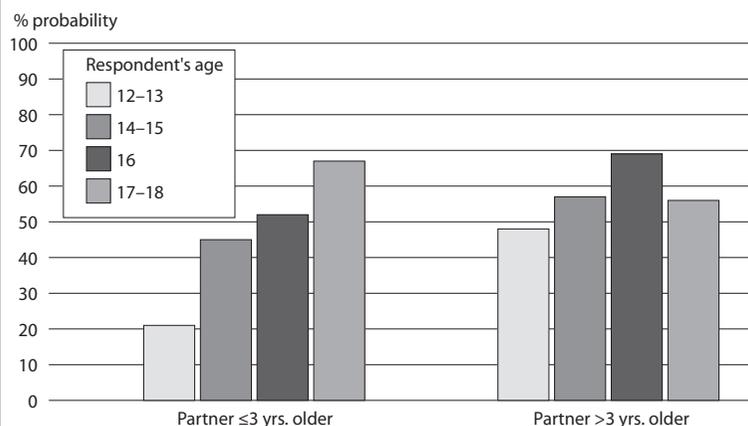
When both educational context and interactions between respondent age categories and having an older partner are taken into account (model 4), results remain consistent with those from model 3. The findings for partner's educational context variables remain of similar magnitude, and the relationship between having an older partner and having had sexual intercourse remains nonsignificant. The association between having had sex and having an older partner found in model 2 is no longer significant with the introduction of the partner's educational context and the interaction terms.

Finally, to explore whether the effect of an older partner varied by the partner's educational status, we introduced to model 3 interactions between older partner and the three indicators of partner's educational status. None of these interactions was significant (not shown), suggesting that dating an out-of-school male partner is associated with increased female sexual risk regardless of the partner's age.

Supplementary Analyses

To this point, we have assumed that our estimates do not vary across states. This may be an erroneous assumption, however, given that states vary in their statutory rape legislation and perhaps in their rates of adolescent sexual intercourse. Moreover, similarities between respondents in the same states may bias our standard errors downward and make our parameter estimates inefficient. We therefore replicated our analyses using a multilevel design, which also allowed us to test if parameter slope estimates (i.e.,

FIGURE 1. Predicted probability of females' having had sexual intercourse in a romantic relationship, by respondent's age and partner's age difference



associations with having an older partner) vary by state.^{*25} Results (not shown) from an intercept-only analysis indicated that the between-state variance in sexual intercourse was 3% of the total variance. This suggests that an overwhelming majority of the variance in rates of sexual intercourse among female secondary school students lies within, not between, states.

To test whether the finding for having an older partner varied across states, we replicated model 3 of Table 2 in a hierarchical design and allowed the older partner slope to vary randomly. Both the older partner random coefficient and the variance component were small and nonsignificant at $p < .05$, suggesting that dating an older partner is not a strong predictor of female sexual activity once the partner's educational status is controlled for, and that this result does not vary significantly between states. Thus, although laws governing adolescent sexual behavior differ substantially across states, adolescent sexual behavior and its relationship to partners' age do not. Statutory rape laws appear to have limited influence on adolescent sexual behavior, while partner's educational status maintains an important association with sexual risk within adolescent romantic relationships.

In our analyses using data from school-enrolled males, the proportion reporting sexual intercourse in romantic relationships with school-enrolled girlfriends did not differ by whether the girlfriends were substantially younger than the males or similarly aged (42–45%; Wald chi-square=0.10; $p = .75$). Indeed, the proportion of male-reported romantic relationships that included sexual intercourse was higher (albeit nonsignificantly) when the female partner was of similar age than when she was substantially younger. These results support the female-reported findings and suggest that substantial age differences between partners are not associated with greater risks of sex once couples' educational contexts are controlled for.

TABLE 2. Odds ratios from logistic regression analyses assessing associations between sexual intercourse and selected characteristics

Characteristic	Model 1	Model 2	Model 3	Model 4
Individual				
Age at start of relationship				
12–13	0.27***	0.24***	0.30***	0.26***
14–15	0.72*	0.75†	0.77†	0.78
16 (ref)	1.00	1.00	1.00	1.00
17–18	1.51**	1.85***	1.45**	1.74**
Race/ethnicity				
White (ref)	1.00	1.00	1.00	1.00
Hispanic	0.67*	0.65*	0.65*	0.64*
Black	1.42*	1.40†	1.39†	1.38†
Other	1.00	1.01	1.03	1.03
Intact family	0.71***	0.71***	0.71**	0.71**
Family socioeconomic status	0.90***	0.90***	0.90***	0.90***
Frequency of drunkenness	1.33***	1.33***	1.32***	1.32***
Physical development	1.19**	1.19**	1.19**	1.19**
Religiosity	0.80**	0.80**	0.80**	0.80**
Closeness to parents	0.91	0.93	0.91	0.92
College aspirations	0.89*	0.88*	0.90†	0.90†
No. of prior sexual partners	1.48***	1.48***	1.47***	1.47***
Married	0.55	0.61	0.51	0.56
Partner/relationship				
Relationship duration	2.51***	2.51***	2.55***	2.54***
Current relationship	1.57***	1.59***	1.57***	1.60***
Partner's age difference				
≤3 yrs. (ref)	1.00	1.00	1.00	1.00
>3 yrs.	1.53**	2.03*	1.14	1.33
Partner's school status				
Same secondary school (ref)	na	na	1.00	1.00
Different secondary school	na	na	1.08	1.06
College	na	na	1.35†	1.36†
Not in school	na	na	1.77**	1.84**
Interactions				
Age 12–13 x older partner	na	1.74	na	2.15
Age 14–15 x older partner	na	0.81	na	0.94
Age 16 x older partner (ref)	na	1.00	na	1.00
Age 17–18 x older partner	na	0.31**	na	0.33**

* $p < .05$. ** $p < .01$. *** $p < .001$. † $p < .10$. Notes: ref=reference group. na=not applicable.

*The intraclass correlation coefficient was 0.024, calculated by dividing estimated state-level residual variance (0.082) by the sum of that variance and the variance of the level-one logistic distribution (0.082 + 3.29).

DISCUSSION

Consistent with prior research,¹³ we found that dating a partner three or more years older was associated with a greater risk of sexual intercourse for adolescent females than dating a partner similar in age. However, that difference was not significant for female adolescents older than 16. In addition, the association did not hold once the partner's educational status was introduced into our models, suggesting that age-asymmetric partnerships are less important than educational-asymmetric partnerships in the prediction of young women's early sexual experiences. Our analysis of school-enrolled males' romantic relationships substantiated this finding, in that no difference in sexual activity was found by whether older adolescent males reported substantially younger or same-age girlfriends.

Our findings have policy implications. Statutory rape legislation aims to reduce teenage pregnancies and to protect adolescents' reproductive health by sanctioning older individuals who have sexual intercourse with partners younger than the legal age of consent. Knowing whether these goals are reached, however, is problematic because the appropriate age of consent and the usefulness of age spans are difficult to test directly. Our analyses provide indirect evidence relevant to age-related elements of statutory rape legislation.

The results suggest that the modal age of consent, 16, may be too low. In fact, the sexual risk associated with dating a significantly older partner was no different for 16-year-old females than for those aged 12–13 or 14–15; it was, however, reduced for 17–18-year-olds. Thus, it appears that the negative association between having an older partner and sexual risk dissipates at age 17 and that this age may be the appropriate age of consent.

That said, our results also suggest that the laws' focus on age may be unwarranted, given that the association between educational context and sexual risk override the association between partner age and sexual risk. Dating a male who has exited the educational system is associated with a substantial increase in females' risks of sexual intercourse and attenuates the estimated older partner odds ratio to nonsignificance. Although it may be extremely difficult and impractical for legislators to consider adolescents' social contexts when defining high-risk sexual encounters, defining sexual risk exclusively on the basis of partner's age is also problematic. The narrow definitions of statutory rape in some states may result in low-risk adolescent males' being forced to register as lifetime sexual offenders and being grouped with sexual predators. Further research should be conducted to confirm our findings and solidify the contexts of sexual risk. Until such research is conducted, considering 17 the appropriate age of consent may be the best alternative.

Although suggestive, our results do not specify an appropriate age span for statutory rape laws. Consistent with prior research¹³ and typical state legislation, our analyses held partner age difference constant at three years.

Furthermore, we did not test whether age-asymmetric relationships differ on the basis of the age of the male partner; additional research should explore whether associations with having an older partner vary according to the partner's age.

In any case, results from our supplementary analyses suggest that statutory rape legislation is likely to have limited impact on adolescent sexual behavior. We found that sexual behavior varies little across states, even though statutory rape laws vary considerably. This finding is perhaps not surprising, in that adolescents are unlikely to know or are likely to be unwilling to follow current statutory rape legislation. However, it also suggests that changes in statutory rape legislation are unlikely to have substantial effects on adolescent sexual activity. We do not mean to imply that statutory rape laws should be repealed; we are simply suggesting that their potential deterrent effect is quite small. Statutory rape laws may be in place for reasons other than simply deterrence. They may be a way of expressing the general consensus among adults that adolescent sexual activity is harmful.⁶ In particular, even though sexual relationships between adolescents and substantially older adults are relatively rare, their perceived predatory and coercive nature may justify the existing statutory definitions.

Strengths and Limitations

Our study has four important strengths. First, Add Health data provide detailed information about characteristics of respondents' partners that relate to sexual risk. Second, the large sample provided ample variation in partner ages. Third, Add Health's nationally representative sample allows us to generalize our findings to the entire population of American adolescents. Finally, data collected from a large number of states allow us to analyze interstate variation in our primary outcomes, helping us to conclude that wide interstate discrepancies in statutory rape legislation are generally unwarranted.

Three limitations of our research should also be noted, however. First, unobserved heterogeneity remains a threat to the validity of our findings. Although we followed the typical route of reducing potential spuriousness with an extensive list of substantive controls, selection effects may explain our findings. Latent characteristics, such as a taste for risk or childhood experiences, may explain why young women date out-of-school or older partners and have sexual intercourse in their romantic relationships. Future research with more advanced counterfactual methodologies (e.g., propensity-score matching) can better ascertain the impact of asymmetrical dating relationships on young women's reproductive health. Another important limitation is that our research does not include nonromantic sexual relationships, which may have different dynamics with regard to age and sexual risk, again requiring additional research. Finally, age spans, along with respondent's age and partner's age, are central to statutory rape legislation and in need of empirical validation. To reduce the

It appears that the negative association between having an older partner and sexual risk dissipates at age 17.

complexity of our models, we fixed age span and focused on the intersection of partners' ages and social context. Future research should seek to identify the ideal age span for reducing sexual risk.

Conclusion

Despite the study's limitations, our findings offer important contributions for understanding adolescent sexual behavior. They show that relationships involving older male partners are associated with a greater risk of sexual intercourse for younger than for older adolescent females. However, educational asymmetries are stronger predictors of sexual risk than age, suggesting that policymakers should shift their gaze from age to social contexts when defining the sexual risks of young women's early romantic relationships.

REFERENCES

1. Kaestle CE, Morisky DE and Wiley DJ, Sexual intercourse and the age difference between adolescent females and their romantic partners, *Perspectives on Sexual and Reproductive Health*, 2002, 34(6):304–309.
2. Lindberg LD et al., Age differences between minors who give birth and their adult partners, *Family Planning Perspectives*, 1997, 29(2):61–66.
3. DiClemente RJ et al., Sexual risk behaviors associated with having older sex partners: a study of black adolescent females, *Sexually Transmitted Diseases*, 2002, 29(1):20–24.
4. Hines DA and Finkelhor D, Statutory sex crime relationships between juveniles and adults: a review of social scientific research, *Aggression and Violent Behavior*, 2007, 12(3):300–314.
5. Langille DB et al., Older male sexual partner as a marker for sexual risk-taking in adolescent females in Nova Scotia, *Canadian Journal of Public Health*, 2007, 98(2):86–90.
6. Cocca CE, *Jailbait: The Politics of Statutory Rape Laws in the United States*, Albany, NY: State University of New York Press, 1997.
7. P.L. 104-193, Aug. 22, 1996.
8. Olivier R, Statutory rape law and enforcement in the wake of welfare reform, 2000, *Stanford Law Review*, Vol. 52, pp. 463–508.
9. Landry DJ and Forrest JD, How old are U.S. fathers? *Family Planning Perspectives*, 1995, 27(4):159–161 & 165.
10. Leitenberg H and Saltzman H, A statewide survey of age at first intercourse for adolescent females and age of their male partners: relation to other risk behaviors and statutory rape implications, *Archives of Sexual Behavior*, 2000, 29(3):203–215.
11. Leitenberg H and Saltzman H, College women who had sex when they were underage minors (13–15): age of their male partners, relation to current adjustment, and statutory rape implications, *Sexual Abuse: A Journal of Research and Treatment*, 2003, 15(2):135–147.
12. Elo IT, King RB and Furstenberg FF, Jr., Adolescent females: their sexual partners and the fathers of their children, *Journal of Marriage and the Family*, 1999, 61(1):74–84.
13. Gowen LK et al., A comparison of the sexual behaviors and attitudes of adolescent girls with older vs. similar-aged boyfriends, *Journal of Youth and Adolescence*, 2004, 33(2):167–175.
14. Abma J, Driscoll A and Moore K, Young women's degree of control over first intercourse: an exploratory analysis, *Family Planning Perspectives*, 1998, 30(1):12–18.
15. Ford K, Sohn W and Lepkowski J, Characteristics of adolescents' sexual partners and their associations with use of condoms and other contraceptive methods, *Family Planning Perspectives*, 2001, 33(3):100–105 & 132.
16. Spera C, A review of the relationship among parenting practices, parenting styles and adolescent school achievement, *Educational Psychology Review*, 2005, 17(2):125–146.
17. Farkas G, Cognitive skills and noncognitive traits and behaviors in stratification processes, *Annual Review of Sociology*, 2003, Vol. 29, pp. 541–562.
18. Gottfredson MR and Hirschi T, *A General Theory of Crime*, Stanford, CA: Stanford University Press, 1990.
19. Troup-Leasure K and Snyder HN, Statutory rape known to law enforcement, *Juvenile Justice Bulletin*, 2005, No. NCJ 208803.
20. Chantala K and Tabor J, *Strategies to Perform a Design-Based Analysis Using the Add Health Data*, Chapel Hill, NC: Carolina Population Center, 1999.
21. Bearman P, Moody J and Stovel K, Chains of affection: the structure of adolescent romantic and sexual networks, *American Journal of Sociology*, 2004, 110(1):44–99.
22. Royston P, Multiple imputation of missing values: update of ICE, *Stata Journal*, 2005, 5(4):527–536.
23. Carlin JB, Galati JC and Royston P, A new framework for managing and analyzing multiply imputed data in Stata, *Stata Journal*, 2008, 8(1):49–67.
24. Raudenbush SW and Bryk AS, *Hierarchical Linear Models: Applications and Data Analysis Methods*, second ed., Thousand Oaks, CA: Sage, 2002.
25. Snijders T and Bosker R, *Multilevel Analysis: An Introduction to Basic and Advanced Multilevel Modeling*, Thousand Oaks, CA: Sage, 2000.

Acknowledgments

The authors thank Michelle Frisco for her helpful comments on an early version of this article. Derek A. Kreager was supported by a grant from the William T. Grant Foundation. This research uses data from Add Health, a program project designed by J. Richard Udry, Peter S. Bearman and Kathleen Mullan Harris, and funded by a grant P01-HD31921 from the Eunice Kennedy Shriver National Institute of Child Health and Human Development, with cooperative funding from 23 other federal agencies and foundations. Special acknowledgment is due to Ronald R. Rindfuss and Barbara Entwisle for assistance in the original design. Persons interested in obtaining data files from Add Health should contact Add Health, Carolina Population Center, 123 W. Franklin Street, Chapel Hill, NC 27516-2524 (<addhealth@unc.edu>). No direct support was received from grant P01-HD31921 for this analysis. An early version of this paper was presented at the annual meeting of the American Sociological Association, San Francisco, Aug. 7–11, 2009.

Author contact: slk304@psu.edu