DO ADOLESCENT SEXUAL AND REPRODUCTIVE ATTITUDES AND KNOWLEDGE PREDICT MEN AND WOMEN'S ADULT SEXUAL PARTNERSHIPS?

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Do Adolescent Sexual and Reproductive Attitudes and Knowledge Predict Men and Women's Adult Sexual Partnerships?

Purpose: Adolescence is a key stage for forming knowledge and attitudes about sex and reproduction that may have long-term implications for adult sexual behaviors. Gender differences in experiences and socialization processes may affect the links between adolescent characteristics and adult behaviors.

Methods: Following adolescents aged 15 and older from Wave I through Wave IV of the National Longitudinal Study of Adolescent to Adult Health (n = 8,108), we test whether adolescent boys' and girls' knowledge about, and attitudes toward, sex and reproduction influence the number of lifetime sexual partners and the likelihood of having concurrent sexual partners in adulthood, using negative binomial regression and logistic regression, respectively. Models are run separately by gender.

Results: Men and women who reported greater physical benefits of sex as adolescence had more partners and were more likely to have concurrent partners in adulthood. Adolescent condom knowledge was associated with more partners in adulthood for both men and women and increased the odds of concurrency in adulthood for men as well. Other indicators were less consistently linked to adult behaviors across gender.

Conclusions: The knowledge and schemas that form during adolescence about sex, contraception, and reproduction have implications throughout the life course, affecting both men's and women's adult sexual behaviors.

Keywords: sexual partnerships; attitudes; contraception; adolescence; gender

Implications and Contributions: Given the larger body of work linking adolescent experiences to adult reproductive behaviors, this research provides further evidence of the importance of accurate and objective sex ed programming and instruction for adolescents. Attitudes as well as knowledge are linked with adult outcomes.

Adolescent attitudes and knowledge are linked to adult behaviors and outcomes, including reproductive behaviors like sex, contraception, and fertility. For instance, adolescent boys with less positive views toward pregnancy were less likely to have become fathers by their late 20s and early 30s (1). Similarly, teen girls with a preference against nonmarital childbearing tended to have children later and within marriage, in part because they delayed sex and used contraception more often (2,3). Such findings are consistent with the idea that adolescence is a key developmental stage for obtaining knowledge about—and forming schemas toward—sex, reproduction, and fertility (5).

To date, existing literature has not considered how adolescent schemas about sex, reproduction, and fertility may affect both men's and women's adult behaviors such as the number of sexual partners and/or having concurrent partners. Given the sexual double standard (6–9), the link between adolescent characteristics and adult behaviors may be more or less strong across gender. Higher numbers of sexual partners, as well as having concurrent partners, is linked to less consistent contraceptive use (10,11), greater risk of sexually transmitted infections (STIs) (12), and unintended childbearing (13,14). Thus, understanding the factors affecting sexual partnerships remains an important public health concern. Prior work on sexual partnerships in young adulthood has focused on variation across sociodemographic factors such as maternal education, family structure, and race/ethnicity (15,16) as well as pubertal timing and age at first sex (17,18). Although there is some evidence that the lifetime number of sexual partners across gender has become more similar, the overall distribution remains skewed, with a substantial minority of men reporting significantly more partners than their female counterparts and men more often reporting concurrent partnerships (19,20). The predictors of sexual behavior for both men and women – and whether they are similar – remain poorly understood.

In this paper, we examine adolescent attitudes about, and knowledge of, sex and reproduction as predictors of adult sexual behavior for men and women. Knowledge and attitudes about contraception and pregnancy influence reproductive behaviors (i.e., pregnancy and contraception) (4,21–25). Attitudes about childbearing and contraception likely affect sexual behaviors as well (26). But because of the multiple societal meanings linked to sexual behavior – and how sexual partnerships, to some extent, reflect relationship dynamics that are key parts of the schemas adolescents form – these associations may be different for men and women. Sex brings benefits, like physical pleasure and closeness with partners. It can be a source of status for teen boys but stigmatization, shame, or guilt for teen girls (8,27). Fear of pregnancy and STIs, potentially compounded by moral and relational concerns over the acceptability of contraception, may further contribute to negative attitudes about sex, especially among women. Female-controlled methods, particularly hormonal methods, can carry side effects, and are harder to obtain than male-controlled methods (such as withdrawal or condoms). Further, women bear the primary burdens of pregnancy and are more physically susceptible to both STI transmission and complications (28). Together, this suggests that perceiving more negative consequences toward early childbearing and sex, having negative attitudes toward contraception, or greater concerns about STIs may be linked to fewer sexual partners and lower chances of concurrent partnerships in adulthood, but primarily for women.

Additionally, many adolescent boys and girls lack accurate knowledge about reproductive biology and contraception, which could also affect adult sexual behaviors to the extent that such knowledge provides tools to avoid the potential consequences of sexual activity. Opportunities for learning more about sex, contraception, STIs, and reproduction remain rare in adulthood (29,30), which often means that information acquired in adolescence (largely through

school sex ed programs), forms the basis for lifelong knowledge. Unfortunately, sex ed programs are often inaccurate and laden with moral overtones (31). Inaccurate information, in turn, may lead to riskier sexual behaviors. For instance, failing to accurately understand the risks of pregnancy may lead to more sex partners. It is also possible that accurate information can increase the chances of having more sex partners; individuals who understand how to protect themselves with contraception may have more partners than those who do not feel able to mitigate the risks of sex. Whether this process works similarly across gender is unclear, in part because there is evidence that girls and boys cover different topics during sex ed (32).

In this paper, we ask: Does adolescent knowledge about reproduction and attitudes toward sex, pregnancy, contraception, and STIs predict sexual partnerships in adulthood for both men and women? We use the National Longitudinal Survey of Adolescent to Adult Health ("Add Health") and draw upon multidimensional constructs representing different aspects of reproductive knowledge and attitudes (24,26). Add Health has a rich set of sociodemographic, psychosocial, and relationship measures, allowing us to account for characteristics linked in prior research to sexual behaviors among youth and young adults.

Methods

Add Health is a nationally representative survey widely used to study sexual and reproductive behavior among adolescents and young adults. Wave I of Add Health surveyed adolescents in grades 7-12 (ages 12-19) in 1994-1995. Respondents were re-interviewed multiple times, and in this analysis, we focus on adults interviewed at Wave IV (n = 15,701) with valid survey weights (n = 14,798). Our adolescent measures were taken from Wave I and were only asked of respondents aged 15 and older, excluding 6,215 respondents. Our measures of sexual behaviors were taken at Wave IV (discussed below). We excluded 86 individuals who reported only same-

gender sexual partners and those with missing sexual partnership data (n = 389), resulting in a final analytical sample size of 8,108 respondents (3,890 men and 4,218 women).

Dependent Variables

The two indicators of sexual partnerships for men and women are drawn from Wave IV. First, we measured the lifetime number of different-sex partners for women and men, using the question(s): "Considering all types of sexual activity, with how many male/female partners have you ever had sex?" Original responses ranged from 0 through 500, but we topcoded responses at 50 or more. If respondents responded "do not know," they were asked a follow-up question to "give their best estimate" within ranges (1 to 4 partners, 5 to 10 partners, 11-20 partners, 21-30 partners, more than 30 partners), and we coded respondents with finite ranges at the midpoint of the range, rounding up if necessary.[1] Second, we have a dichotomous indicator of concurrent sex partners in the year preceding the Wave IV interview, using the question: "In the past 12 months, did you have sex with more than one partner at around the same time?"

Key Independent Variables

Our key independent variables build on those in Guzzo et al. (24), which used factor analyses to identify items contributing to reproductive attitude and knowledge constructs. For attitudes toward reproduction, the factor structure had three factors: negative feelings toward early pregnancy, consequences of early pregnancy, and favorable birth control attitudes. For reproductive knowledge, the factor structure had three factors: female reproductive biology knowledge, condom knowledge, and birth control confidence.

In addition to those sets of factors, we considered attitudes toward sex and STIs. To identify these factors, we adopt the procedures outlined in Guzzo et al. (24). First, we identified

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[1] Preliminary analyses also considered lifetime number of 'one-night stands' as a separate dependent variable, but the findings were largely similar (not shown).

items potentially reflecting attitudes toward sex and STIs in Wave I. We then conducted both exploratory and confirmatory factor analyses (EFA and CFA, respectively) to identify the underlying constructs, if any. We compared the fit of models with different numbers of items and factors using two goodness-of-fit criteria, Root Mean Squared Error of Approximation (RSMEA) and Comparative Fit Index (CFI), and we conducted chi-square tests to determine significant improvement in model fit across models (Hu & Bentler, 1999). The factor analyses identified three underlying factors of attitudes toward sex: physical benefits, social benefits, and social costs. There were only two measures of attitudes about STIs; these did not load onto a factor and were used as separate indicators. One is specific to AIDS (a major concern in the 1990s) and reflects the perceived consequences of AIDS, and the other is an attitude towards STI prevention. Table 1 shows the key attitudinal and knowledge constructs, and the component items, derived from the factor analyses.

- Table 1 here -

We then tested for metric invariance across gender as well as conducted factor analyses separately by gender (not shown), and both confirmed that the factor structure held across gender (i.e., the identified constructs, the component measures, and their interrelationships are equally valid for men and women). We then used the items that contributed to each factor to calculate measures representing average scores for each attitudinal measure (ranging from 1-5). For the knowledge constructs, we created measures from summing the number of correct answers and/or the number of answers of strongly agree/agree (ranging from 0-2 for female reproductive biology knowledge, 0-4 for condom knowledge, and 0-3 for birth control confidence). We used averages and sums rather than factor scores because the former are more straightforward to interpret; results were substantively similar when using factor scores.

Control Variables

First, we controlled for two demographic characteristics: age at Wave IV (ranging from 26-34) and race-ethnicity (non-Hispanic White, non-Hispanic Black, Hispanic, Asian/other). Second, we controlled for family background and psychosocial characteristics at Wave I, including: family structure (both biological parents, stepparents, single parent, other) and family socioeconomic status (using Bearman and Moody's (33) operationalization, which combines information on occupation and education for both mothers and fathers to create an index for each parent ranging from 1-10 and then uses the higher of the two scores as a continuous variable). For psychosocial characteristics, we included a dichotomous indicator of whether the respondent highly expected to attend college, the respondent's score on an aptitude test (the Add Health version of the widely used Peabody Picture Vocabulary test), and adolescent religiosity (a scaled variable of four items about religious service attendance, participation in youth activities, prayer, and importance, $\alpha = 0.85$). Third, we included life course status measures at Wave IV: relationship status (ever married, never married but cohabited, never married or cohabited), education (less than high school, high school, some college (including associate's degree), bachelor's degree or more), household income (twelve categories ranging from less than \$5,000 to \$150,000 or more; we treated this as a continuous variable), and a dichotomous indicator of whether the respondent was employed full time (35 or more hours a week). Descriptive statistics are shown in Table 2.

– Table 2 here –

We used multiple imputation for missing data using Stata 15's *mi* commands. We did not impute the dependent variables or the key attitudinal and knowledge measures. Missing data was most common for the Wave I aptitude test scores (missing for 384 cases) and Wave IV income

(missing for 430 cases). There were 20 or fewer cases imputed for other covariates (Wave I: wanting/expecting to go to college; Wave IV: relationship type, education, and employment).

Analytic Strategy

We began with descriptive statistics by gender for the attitudinal and knowledge measures and for the sexual partnerships measures, indicating significant differences across gender where present (taken from models regressing the measures on gender, in the case of linear variables, and from Pearson chi-squares for categorical variables). Next, we ran two sets of regression models by gender. Because lifetime number of different-sex partners by Wave IV exhibited over-dispersion (variance greater than the mean), we used negative binomial regression. We used logistic regression to predict the odds of having concurrent sex partners in the past 12 months at Wave IV. In multivariable models, we standardize the attitudinal and knowledge measures to compare effect sizes since the measures are on different scales. To account for the sampling design of Add Health, all analyses are weighted with Wave IV longitudinal weights using Stata's *svy* commands. In the interest of brevity, we discuss only the coefficients for the reproductive attitudes, sex attitudes, and reproductive knowledge measures.

Results

Descriptive Statistics

Table 3 shows the weighted descriptive statistics by gender for the attitudinal and knowledge measures at Wave I and for sexual partnerships at Wave IV. Not surprisingly, adolescent girls were significantly more concerned about the consequences of early pregnancy than their male counterparts (3.46 and 3.37, respectively, p=.002) and held more favorable attitudes toward birth control (4.10 and 3.86, respectively, p<.001). Girls also perceived fewer physical (2.97) or social (2.11) benefits and more social costs to sex (3.29) than boys (3.52, 2.73, and 3.00, respectively,

with p-values of p<.001 for all) in addition to having greater concerns about the hassle of preventing STIs (4.04 vs. 3.80, p<.001). Girls reported significantly higher levels of accuracy about female reproductive biology knowledge (2.00) and condom knowledge (3.04) than boys (1.83 and 2.90, respectively, with p-values of p<.001 for both). Despite girls' greater actual knowledge, though, boys were significantly more confident about their knowledge of birth control (2.21 for boys vs. 2.08 for girls, p<.001). Looking at adult sexual partnerships, at the bottom of Table 3, men reported about twice as many lifetime different-sex sexual partners than women (averaging 18.6 vs. 9.1 by Wave IV, with medians of 15 for men and 6 for women, not shown). Similarly, almost twice as many men (15.5%) reported having concurrent sexual partners at Wave IV than women (8.8%). Gender differences for both sexual indicators were statistically significant at p=.001.

– Table 3 here –

Multivariable Results

Table 4 shows the standardized coefficients from the negative binomial regression models for the lifetime number of different-sex partners by Wave IV. For women, adolescent perceptions of greater physical (adjusted β=0.81, p<.001) and social benefits (adjusted β=0.27, p=.043) to sex increased the number of partners, while perceiving more costs (adjusted β=-0.40, p<.001) to sex reduced the number. For men, only one measure of adolescent attitudes towards sex was predictive of the number of partners in adulthood – the physical benefits of sex (adjusted β=0.38, p<.001). Another difference between men and women was the importance of adolescent attitudes toward birth control. For men – but not women – more favorable attitudes toward contraception decreased the number of lifetime sexual partners (adjusted β=-0.20, p=.041 and adjusted β=0.12, p=.275, respectively). Conversely, birth control confidence increased the number of sexual

partners for women (adjusted β=0.21, p=.001) but not men (adjusted β=0.06, p=.306). Greater

adolescent condom knowledge was associated with having more partners in adulthood for both

men (adjusted β=0.16, p=.026) and women (adjusted β=0.36, p<.001). Comparing the magnitude

of the coefficients across measures, perceived adolescent physical benefits to sex had the largest

impact on adult number of partners, especially for women.

- Table 4 here -

Table 5 shows the standardized coefficients from the logistic regression predicting

concurrent partners. For both men and women, perceiving greater physical benefits of sex during

adolescence increased the likelihood of having concurrent sexual partners in adulthood (adjusted

β=0.82, p=.036 and adjusted β=1.24, p=.018, respectively). For women, this was the only

adolescent predictor of adult concurrency that reached statistical significance at conventional

levels; however, women with more negative attitudes toward early pregnancy were marginally

less likely to report concurrent partners in the last year (adjusted β=-0.73, p=.054). For men,

greater birth control confidence (adjusted β=-0.47, p=.027) reduced the chances of concurrency,

whereas greater condom knowledge (adjusted β=0.56, p=.042) and greater adolescent concerns

over AIDS (adjusted β=0.65, p=.021) increased the odds of concurrency. For men, greater

adolescent concerns over the social costs of sex marginally reduced the likelihood of concurrent

partners in the last year (adjusted β=-0.91, p=.053).

- Table 5 here -

Discussion

This work contributes to the growing literature linking adolescent attitudes and knowledge about

reproductive behaviors to outcomes later in the life course (1–3,26), building on the larger body

of work showing short-term effects on behavior (34). Not surprisingly, we found that adolescent

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attitudes about sex were more strongly predictive of adult sexual behaviors than attitudes about pregnancy or contraception, concerns about STIs, or knowledge about reproduction or contraception. Adolescent attitudes and knowledge seemed to be less related to concurrency in the past year than lifetime number of sexual partners (at least for women), suggesting a diminishing association over time.

In general, those who perceived more physical benefits to sex as adolescents reported more partners and were more likely to have concurrent partners as adults. For women, social aspects mattered too, with more costs reducing the number of partners and more benefits increasing the number. The lack of a similar effect for men could be because assessments of the social costs and benefits of sex change more between adolescence and adulthood for boys than for girls. In terms of the other adolescent attitudinal and knowledge measures, there was less consistent links between teens' considerations of the consequences of sex – or their knowledge about how to avoid the consequences of sex, such as pregnancy or an STI – and their lifetime sexual partnerships or their likelihood of concurrent partnerships. For instance, adolescent condom knowledge was associated with more partners and, for men, chances of sexual concurrency. Those with more knowledge about condoms may feel more protected against the risks that accompany more partnerships. Distinct from knowledge, however, we also saw that women with greater birth control confidence in adolescence – that is, who felt more comfortable about withdrawal, the rhythm method, and how to use a condom – had significantly more partners in adulthood than their less confident female counterparts. For men, this confidence translated into lower chances of sexual concurrency. The findings suggest that these measures might capture different aspect of men and women's reproductive lives – providing confidence in one's ability to avoid the potential consequences of more partners over the lifetime for women

but, for men, perhaps reflecting greater familiarity and experience with contraception within a relational context in such a way as to reduce having non-monogamous sexual relationships. Similarly, for men only, more favorable attitudes about birth control during adolescence was linked to fewer sexual partners in adulthood. It may be that more positive birth control attitudes among adolescent boys reflect greater attention to the perspective of their female partners (recall that adolescent males on average reported significantly less positive views toward contraception than their female counterparts). Boys who were more invested in the relational aspects of sexual partnerships in adolescence may be more likely to have sexual relationships in adulthood that are within long-term partnerships, and thus have fewer of them.

Limitations

Like all secondary data analyses, there are limitations related to measurement of key variables. For instance, there were only two questions addressing attitudes about STIs. Another concern is that adolescent boys and girls have different connotations with the term "birth control," with boys thinking of condoms and girls thinking of oral contraception. Additionally, the measure of sexual activity was not restricted to vaginal sex, and the measure of concurrency in the 12 months prior to Wave IV is likely a lower bound given it is not a lifetime estimate. Finally, a major limitation is that Add Health is an increasingly dated sample. Since our focus is on the long-term implications of adolescent attitudes and knowledge, we must necessarily focus on cohorts who have been followed over multiple life course stages.

Conclusion

Although we expected that teen girls' attitudes and knowledge would be more predictive of their adult sexual behaviors than teen boys' attitudes and knowledge, this was largely unsupported. While teen boys and girls had different attitudes and levels of knowledge – and adult men

reported more sexual partnerships and more often had concurrent sexual partners than women –

the links between adolescence attitudes and knowledge and adult behavior was generally similar.

This similarity suggests that adolescence is indeed a key developmental period linked to adult

sexual activity for both genders. Schemas about sex and reproductive behaviors that are formed

during this life course stage influence behaviors not only in the short term but well into

adulthood. As such, it is crucial to better examine how teens learn about sex and reproduction –

both the mechanisms (such as formal sources, like sex ed in school, and informal sources, such

as parents, peers, and the media) and the content, accuracy, and messaging of these sources.

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Table 1. Component Variables for Attitude and Knowledge Measures

Negative Feelings Toward Early Pregnancy[A]

    Getting pregnant at this time in your life is one of the worst things that could happen to you.

    It wouldn't be all that bad if you got pregnant now.

Consequences of Early Pregnancy[A]

    If you got pregnant, it would be embarrassing for your family.

    If you got pregnant, it would be embarrassing for you.

    If you got pregnant, you would be forced to grow up too fast.

    If you got pregnant, you would have to quit school.

Favorable Birth Control Attitudes[A]

    It {IS/WOULD BE} too hard to get a boy to use birth control with you.

    Using birth control is morally wrong.

    In general, birth control is too much of a hassle to use.

    It takes too much planning ahead of time to have birth control on hand when you're going to have sex.

    For you, using birth control interferes/would interfere with sexual enjoyment

    In general, birth control is too expensive to buy.

Physical Benefits of Sex[A]

    If you had sexual intercourse, it would give you a great deal of physical pleasure.

    If you had sexual intercourse, it would relax you.

Social Benefits of Sex[A]

    If you had sexual intercourse, your friends would respect you more.

    If you had sexual intercourse, it would make you more attractive to men.

    If you had sexual intercourse, you would feel less lonely.

Social Costs of Sex[A]

    If you had sexual intercourse, your partner would lose respect for you.

    If you had sexual intercourse, afterward, you would feel guilty.

    If you had sexual intercourse, it would upset {MOTHER}.

Consequences of AIDS[A]*:* If you got the AIDS virus, you would suffer a great deal.

Attitude toward STI prevention[A]*:* It would be a big hassle to do the things necessary to completely protect yourself from getting a sexually transmitted disease.

Female Reproductive Biology Knowledge[B]

    The most likely time for a woman to get pregnant is right before her period starts.

    In general, a woman is most likely to get pregnant if she has sex during her period, as compared with other times of the month.

Condom Knowledge[B]

    Even if the man pulls out before he ejaculates, even if ejaculation occurs outside of the woman's body, it is still possible for the woman to become pregnant.

    When putting on a condom, it is important to have it fit tightly, leaving no space at the tip.

    Vaseline can be used with condoms, and they work just as well.

    As long as the condom fit over the tip of the penis, it doesn't matter how far down it is unrolled.

Birth Control Confidence[C]

    You are quite knowledgeable about the rhythm method of birth control and when it is a "safe" time during the month for a woman to have sex and not get pregnant.

    You are quite knowledgeable about how to use a condom correctly.

    You are quite knowledgeable about the withdrawal method of birth control.

[A] All items measured on a scale of 1=strongly agree to 5=strongly disagree, with 3=neither agree not disagree. Items were reverse coded as necessary such that higher responses are consistent with the overall category

[B] All items measured as true/false. Analytically, items recoded so that 1=correct and 0=incorrect.

[C] Originally measured on a scale of 1=strongly agree to 5=strongly disagree. Recoded as a dichotomous variable: 1=strongly agree/agree and 0=all other responses.

Table 2. Weighted Descriptive Statistics of Control Variables, by Gender

		Women (n = 4,218)	Men (n = 3,890)	p^A
Overall distribution		48.7%	51.3%	
Demographic characteristics				
Wave IV Age		29.8 years	30.0 years	
		(1.20)	(1.21)	<.001
Race-ethnicity				.290
	Non-Hispanic White	68.0%	68.4%	
	Non-Hispanic Black	16.8%	15.1%	
	Hispanic	11.1%	11.2%	
	Asian/other	4.2%	5.3%	
Wave I Background characteristics				
Family structure				.249
	Married bio parents	57.9%	60.0%	
	Stepparents	15.4%	15.8%	
	Single parent	22.4%	20.0%	
	Other	4.4%	4.9%	
Family socioeconomic status (range 1-10)		5.54	5.67	
		(2.77)	(2.56)	.210
Highly expected to go to college		72.4%	63.8%	<.001
Aptitude		101.10	102.06	
		(14.41)	(13.07)	.062
Religiosity (range 1-7)		3.53	3.50	
		(1.58)	(1.61)	.590
Wave IV Life course characteristics				
Union status				<.001
	Never cohabited or married	11.7%	14.8%	
	Ever cohabited but never married	26.5%	31.7%	
	Ever married	61.8%	53.5%	
Education				<.001
	No high school	5.2%	7.7%	
	High school/GED	47.9%	55.5%	
	Some college/AA degree	10.0%	7.0%	
	BA	36.8%	39.8%	
Employed full-time		63.1%	80.3%	<.001
Household income				.157
	Less than $5,000	2.7%	2.1%	
	$5,000-$9,999	2.5%	1.5%	
	$10,000-$14,999	3.8%	2.6%	
	$15,000-$19,999	3.0%	3.1%	
	$20,000-$24,999	4.4%	4.1%	
	$25,000-$29,999	4.8%	4.7%	
	$30,000-$39,999	10.1%	9.7%	
	$40,000-$49,999	12.1%	11.5%	
	$50,000-$74,999	26.0%	26.4%	
	$75,000-$99,999	15.5%	17.6%	
	$100,000-$149,999	10.5%	11.8%	
	$150,000 or more	4.6%	4.8%	

May not total 100% due to rounding

[A]Significant differences between men and women in the distribution of categories from Pearson chi-square tests.

Table 3. Weighted Descriptive Statistics of Adolescent Attitudes and Knowledge and Adult Sexual Experiences, by Gender

	Women	Men	
	Mean/% (SD)	Mean/% (SD)	p^A
Attitudinal and Knowledge Measures (Wave I)[B]			
Negative feelings toward early pregnancy	4.28 (0.91)	4.33 (0.80)	.082
Consequences of early pregnancy	3.46 (0.92)	3.37 (0.87)	.002
Favorable birth control attitudes	4.10 (0.77)	3.86 (0.79)	<.001
Physical benefits of sex	2.97 (0.93)	3.52 (0.78)	<.001
Social benefits of sex	2.11 (0.73)	2.73 (0.72)	<.001
Social costs of sex	3.29 (0.94)	3.00 (0.81)	<.001
Consequences of AIDS	4.40 (0.95)	4.43 (0.89)	.263
Attitude toward STI prevention	4.04 (1.25)	3.80 (1.24)	<.001
Female reproductive biology knowledge	2.00 (1.10)	1.83 (1.00)	<.001
Condom knowledge	3.04 (0.95)	2.90 (0.95)	<.001
Birth control confidence	2.08 (1.07)	2.21 (1.07)	<.001
Adult Sexual Outcomes (Wave IV)			
Lifetime number of opposite-sex sex partners (any sex act)	9.08 (9.90)	18.55* (13.80)	<.001
Had concurrent sex partners in last 12 months	8.8%	15.5%*	<.001

[A] Significance of gender differences in variable means

[B] Attitudinal measures range from 1-5. Female reproductive biology knowledge represents the number of correct answers, ranging from 0-2. Condom knowledge represents the number of correct answers, ranging from 0-4. Birth control confidence represents the number of answers in which the respondent agreed or strongly agreed that they were knowledgeable.

Table 4. Coefficients from Negative Binomial Regression Models of Lifetime Number of Partners Wave IV of Add Health, by Gender

	Women (n = 4,218)			Men (n = 3,890)		
	Adjusted β coefficient	SE	*p*	Adjusted β coefficient	SE	*p*
Wave I attitudes and knowledge (standardized coefficients						
Negative feelings toward early pregnancy	-0.03	0.12	.829	0.05	0.09	.585
Consequences of early pregnancy	-0.10	0.13	.442	-0.09	0.09	.350
Favorable birth control attitudes	0.12	0.11	.275	-0.20	0.09	.041
Physical benefits of sex	0.81	0.10	<.001	0.38	0.10	<.001
Social benefits of sex	0.27	0.13	.043	0.17	0.12	.168
Social costs of sex	-0.40	0.10	<.001	-0.15	0.12	.202
Consequences of AIDS	-0.03	0.09	.759	-0.08	0.07	.261
Attitude toward STI prevention	0.06	0.08	.450	0.02	0.06	.683
Female reproductive biology knowledge	0.12	0.07	.091	0.02	0.06	.791
Condom knowledge	0.36	0.09	<.001	0.16	0.07	.026
Birth control confidence	0.21	0.06	.001	0.06	0.06	.306
Demographic characteristics						
Wave IV Age	-0.06	0.02	.001	-0.00	0.01	.816
Race-ethnicity						
Non-Hispanic White	-	-	-	-	-	-
Non-Hispanic Black	0.01	0.07	.022	0.18	0.06	.002
Hispanic	-0.19	0.08	.219	0.03	0.05	.543
Asian/other	0.18	0.15		-0.14	0.09	.119
Wave I Background characteristics						
Family structure						
Married bio parents	-	-	-	-	-	-
Stepparents	0.16	0.05	.001	0.03	0.05	.500
Single parent	0.13	0.05	.012	0.02	0.05	.639
Other	0.16	0.10	.109	0.04	0.10	.711
Family socioeconomic status	0.01	0.01	.266	0.01	0.01	.411
Highly expected to go to college	-0.07	0.04	.116	0.03	0.04	.381
Aptitude	0.01	0.00	.001	0.00	0.00	.005
Religiosity	0.01	0.01	.350	-0.01	0.01	.176
Wave IV Life course characteristics						
Union status						
Never cohabited or married	-0.02	0.08	.791	-0.10	0.06	.115
Ever cohabited but never married	0.41	0.04	<.001	0.19	0.04	<.001
Ever married	-	-	-	-	-	-
Education						
No high school	-0.06	0.10	.564	-0.04	0.07	.565
High school/GED	-	-	-	-	-	-
Some college/AA degree	-0.09	0.06	.151	-0.05	0.08	.476
BA	-0.17	0.06	.002	-0.07	0.04	.107
Employed full-time	0.06	0.03	.089	-0.02	0.05	.698
Household income	-0.00	0.01	.702	0.00	0.01	.875

Table 5. Coefficients from Logistic Regression of Concurrent Sex Partners at Wave IV of Add Health, by Gender

	Women (n = 4,218)			Men (n = 3,890)		
	Adjusted β coefficient	SE	*p*	Adjusted β coefficient	SE	*p*
Wave I attitudes and knowledge (standardized coefficients						
Negative feelings toward early pregnancy	-0.73	0.38	.054	0.49	0.36	.176
Consequences of early pregnancy	0.14	0.40	.720	-0.17	0.35	.631
Favorable birth control attitudes	-0.09	0.49	.856	-0.62	0.34	.073
Physical benefits of sex	1.24	0.52	.018	0.82	0.39	.036
Social benefits of sex	0.51	0.40	.205	0.27	0.44	.545
Social costs of sex	-0.32	0.35	.369	-0.91	0.47	.053
Consequences of AIDS	0.52	0.32	.107	0.65	0.28	.021
Attitude toward STI prevention	-0.19	0.24	.430	-0.16	0.20	.431
Female reproductive biology knowledge	0.07	0.30	.806	0.36	0.23	.120
Condom knowledge	0.37	0.35	.298	0.56	0.27	.042
Birth control confidence	-0.13	0.25	.586	-0.47	0.21	.027
Demographic characteristics						
Wave IV Age	-0.11	0.07	.137	-0.07	0.05	.168
Race-ethnicity						
Non-Hispanic White	-	-	-	-	-	-
Non-Hispanic Black	0.14	0.26	.538	0.98	0.18	<.001
Hispanic	0.47	0.39	.057	0.37	0.22	.094
Asian/other	0.92	0.93	.015	-0.45	0.34	.187
Wave I Background characteristics						
Family structure						
Married bio parents	-	-	-	-	-	-
Stepparents	-0.13	0.17	.509	-0.03	0.18	.852
Single parent	-0.08	0.16	.664	0.21	0.15	.158
Other	-0.00	0.33	.991	0.46	0.27	0.97
Family socioeconomic status	0.01	0.03	.756	0.02	0.03	.337
Highly expected to go to college	0.12	0.20	.521	0.28	0.16	.089
Aptitude	0.01	0.01	.084	0.00	0.10	.393
Religiosity	0.07	0.05	.181	0.00	0.04	.999
Wave IV Life course characteristics						
Union status						
Never cohabited or married	0.46	0.40	.068	0.69	0.21	.001
Ever cohabited but never married	0.67	0.33	<.001	1.05	0.15	<.001
Ever married	-	-	-	-	-	-
Education						
No high school	0.28	0.38	.345	0.13	0.32	.696
High school/GED	-	-	-	-	-	-
Some college/AA degree	-0.11	0.21	.625	0.14	0.30	.652
College	-0.41	0.14	.062	-0.51	0.16	.002
Employed full-time	0.22	0.23	.234	-0.10	0.16	.512
Household income	-0.09	0.03	.004	0.05	0.03	.060