Age of Partner at First Adolescent Intercourse and Adult Sexual Risk Behavior Among Women

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Abstract

Background: Adolescent females who have early sexual experiences with older male partners report high rates of sexual risk behavior during adolescence, but little is known about whether these early sexual experiences are associated with adult sexual risk behavior. The purpose of this study was to investigate whether having first consensual sex with an older partner was associated with sexual risk behavior in adulthood.

Methods: Participants were 292 women (66% African American, mean age = 26 years) attending a public sexually transmitted disease (STD) clinic who reported having voluntary vaginal sex before age 18. Participants completed a computerized survey assessing child/adolescent sexual experiences and current adult sexual risk behavior.

Results: Participants were, on average, 14.6 years at first vaginal intercourse; their partners were, on average, 17.5 years. After controlling for covariates, a greater partner age difference at first intercourse was associated with more episodes of unprotected sex with a steady partner and a greater proportion of episodes of unprotected sex with a steady partner in the past 3 months.

Conclusions: Having an older first sex partner during adolescence was associated with sexual risk behavior in adulthood. Early sexual experiences may be important life events that influence subsequent sexual behavior. Sexual health interventions need to target female adolescents before they initiate sexual intercourse to reduce risk for STDs and human immunodeficiency virus (HIV) infection.

Introduction

MANY SEXUALLY ACTIVE female adolescents report older sex partners. In national surveys, nearly 50% of sexually active adolescent females reported having a sex partner ≥ 2 years older,¹ and 36% reported a partner ≥ 3 years older.²

For adolescent females, having sex with an older male partner correlates with a variety of negative health outcomes. Having an older sexual partner is associated with less want- edness of first intercourse, more suicide attempts, more substance use, and more delinquency among adolescent females.³⁻⁵ In addition, having an older sexual partner is associated with negative sexual health outcomes during adolescence, including a lower likelihood of using contraception, less condom use, greater likelihood of pregnancy, and greater likelihood of sexually transmitted disease (STD) diagnosis.^{1-3,6,7} For example, using data from the National Survey of Family Growth, Darroch et al.² found that adolescent females who had a sex partner who was ≥ 6 years older had a pregnancy rate almost four times that of adolescent

females with a similar-aged sex partner. Among pregnant African American adolescents, those with a sex partner ≥ 2 years older were almost four times more likely to test positive for *Chlamydia* than those with a similar-aged partner.⁶

Early sexual experiences are perceived as important life events,⁸ which may influence and shape subsequent sexual behavior. Numerous studies have documented an association between abusive childhood sexual experiences and adult sexual risk behavior.⁹⁻¹² This research indicates early abusive sexual experiences may influence subsequent sexual behavior. Although the literature on abusive sexual experiences and adult sexual risk behavior is extensive, few studies have investigated whether characteristics of consensual early sexual experiences are associated with later sexual behavior. Because partner age discrepancy is an important predictor of sexual risk and sexual health during adolescence, this characteristic may also predict sexual behavior in adulthood.

Only two studies have investigated whether partner age difference at first intercourse is associated with later adult sexual risk behavior, with conflicting results. Using data from

the National Longitudinal Study of Adolescent Health, Ryan et al.¹³ found that having sex at a young age with an older partner was associated with having an STD by young adulthood. In contrast, using data collected from young women in Haiti, Gomez et al.¹⁴ found that there was no relation between having an older partner at first sexual intercourse and recent STD diagnosis. Although STDs are an important biological outcome, they are an imperfect marker of sexual risk behavior. Additional research that assesses actual behavior is needed. In addition, these studies did not exclude unwanted first sexual experiences; therefore, they could not disentangle associations between consensual sexual experiences and adult sexual risk behavior from associations between childhood sexual abuse and adult sexual risk behavior. In addition, both of these studies included only women who were young adults, limiting conclusions that could be drawn about potential effects of early sexual experiences across the life span. Finally, there may be cultural differences in sexual behavior and expectations, making it inappropriate to generalize the findings of Gomez et al.¹⁴ to US populations.

Thus, the primary purpose of this study was to investigate whether partner age difference at first consensual sexual intercourse was associated with subsequent adult sexual risk behavior among female patients attending an STD clinic. In addition to controlling for demographic covariates, we also controlled for variables that may influence both early and current sexual experiences (i.e., alcohol use and depression).

Materials and Methods

Procedures

All procedures were approved by the IRBs of the participating institutions. Female patients were called from the waiting room of a publicly funded STD clinic into a private examination room, where they were screened for eligibility (i.e., age ≥ 18 , not impaired mentally, and had engaged in vaginal or anal intercourse in the past 3 months) by a trained research assistant (RA). The RA explained the study to eligible patients; those patients who were interested and who demonstrated understanding of study procedures, risks, and benefits¹⁵ were invited to participate and provided written, informed consent.

To assure high-quality data, to expedite the clinic experience for patients, and to minimize disruption to clinic flow, only 1 patient was allowed to complete study procedures at a time. For similar reasons, only 2 patients were recruited each day. These procedures assured that patients received individual attention, completed assessment materials confidentially and privately, and minimized the time required for women to participate. In addition, these procedures assured that the normal patient flow in the clinic was not interrupted.

The assessment involved four steps. First, with the help of the RA, participants completed a calendar of salient events to orient them to the time frame of the past 3 months used in many of the questions. Second, women completed an audio computer-assisted self-interview (ACASI) that assessed demographic variables, sexual history, current sexual behavior, alcohol use, and depressive symptoms. Third, women completed audiotaped role plays and, fourth, a condom demonstration exercise. They were reimbursed \$20 for their time.

Study sample

Of the 828 patients who were screened for eligibility, 696 (84%) met eligibility criteria; of those who were eligible, 435 (63%) agreed to participate. For this report, we present data only from participants who reported having consensual vaginal intercourse before age 18. Of the 435 patients who agreed to participate, 69 did not have vaginal intercourse before age 18, and 74 reported that their first vaginal sex was unwanted (i.e., they were forced or threatened), leaving a final sample of $N = 292$.

Measures

Covariates. Participants reported their education (0, more than high school; 1, high school or less), employment status (0, employed; 1, unemployed), income (0, $\geq \$15,000$ /year; 1, $< \$15,000$ /year), and race (0, Caucasian; 1, non-Caucasian). In addition, participants reported the number of days they drank alcohol in a typical week and the average number of drinks they consumed on days they drank; these responses were multiplied to derive the average number of drinks per week. Participants also completed the Center for Epidemiologic Studies Depression Scale–Short Form (CES-D),^{16,17} which assesses depressive symptoms. Responses for each item ranged from 0 (rarely or none of the time) to 3 (most or all of the time). Responses were reverse scored, where appropriate, and summed; a higher score indicates greater depressed affect.

First sexual experience. Participants were asked to recall the first time they had any sort of sexual experience, which could range from kissing to intercourse. They were asked details about the experience, including their age, their partner's age, and the type of sexual experience (i.e., kissing, sexual touching, receiving oral sex, giving oral sex, vaginal sex, or anal sex). Participants were asked to list up to 10 different partners with whom they had a sexual experience before age 18. Participants' age at first sexual intercourse was the youngest age at which they reported having vaginal sex; their age at this experience was subtracted from their partner's age to calculate the age difference at first vaginal sex.

Lifetime and current sexual behavior. Participants were asked to report the number of men and the number of women they had sex with in their lifetime and in the past 3 months; these responses were summed to determine participants' (1) number of lifetime sexual partners and (2) number of sexual partners in the past 3 months. Participants were also asked to report the number of condom-protected and unprotected vaginal and anal sex episodes in the past 3 months with a steady partner (defined as the sexual partner with whom the participant was closest) and with any other partners (defined as any sexual partner the participant did not consider a steady partner). Responses were summed to calculate (3) the total number of episodes of unprotected sex (vaginal + anal) in the past 3 months, (4) the number of episodes of unprotected sex with a steady partner in the past 3 months, and (5) the number of episodes of unprotected sex with nonsteady partners in the past 3 months. The number of unprotected sex episodes was divided by the number of unprotected plus protected sex episodes to derive the (6) proportion of episodes of unprotected sex with all partners, (7) proportion of unprotected sex

episodes with a steady partner, and (8) proportion of unprotected sex episodes with nonsteady partners. Participants were asked how many times in their life they were treated for an STD; responses were dichotomized into (9) ever treated vs. never treated for an STD. In addition, to assess partner concurrency, participants who reported having a steady partner were asked (10) if they had any other sexual partners while they were in a relationship with their current partner.¹⁸ All sexual behavior items and indicators have been used extensively in prior research with women^{19–21} and follow published guidelines.²²

Data analysis

Data were inspected for outliers; observations that were more than three times the interquartile range (IQR) from the 75th percentile were trimmed (to three times the IQR from the 75th percentile + 1). Data were inspected for normality by inspecting skewness and kurtosis statistics, as well as frequency histograms. Nonnormally distributed variables (number of partners, number of episodes of unprotected sex) were transformed using a $\log_{10}(x)$ transformation. Linear regressions for continuous sexual behavior outcomes and logistic regressions for dichotomous sexual behavior outcomes were conducted to determine the association between partner age difference at first sexual intercourse and current sexual behavior. Multivariate analyses (linear and logistic regressions) were conducted to determine the association between partner age difference at first intercourse and current sexual behavior, after controlling for covariates.

Results

Participant characteristics

Participants were 292 women (66% African American, 18% Caucasian, and 16% other or mixed race) who were patients at a publicly funded STD clinic (Table 1). Approximately half of participants had a high school education or less (58%), were unemployed (48%), and had an income <\$15,000 per year (55%). The majority of participants were single (never married, 82%). The average age of participants was 26 years (range 18–55 years).

Participants were, on average, 14.6 years old at first vaginal intercourse. Their first vaginal intercourse partners were, on average, 17.5 years old. Sixty percent of the sample had a first sex partner who was ≥ 2 years older, and 41% of the sample had a first sex partner who was ≥ 3 years older. Participants reported a median of 14 lifetime sex partners and a median of 1 sex partner in the past 3 months. They reported a median of 10 episodes of unprotected sex in the past 3 months; an average of 69% of sex episodes were unprotected. The majority of participants had a steady partner (86%); of those with a steady partner, 35% reported having recent concurrent partners. Most participants (83%) reported a previous STD diagnosis.

Preliminary analyses

Age difference at first intercourse was inversely related to age at first sex ($p < 0.001$); therefore, age at first intercourse was included as a covariate in all analyses. More lifetime partners was associated with being unemployed ($p < 0.01$), lower income ($p < 0.05$), being Caucasian ($p < 0.05$), being

TABLE 1. PARTICIPANT CHARACTERISTICS

Characteristic	n (%)
Education, high school or less	169 (58)
Unemployed	140 (48)
Income < \$15,000/year	158 (55)
Never married	238 (82)
African American	194 (66)
STD diagnosis, ever	242 (83)
Steady partner (past 3 months)	248 (86)
Concurrent partners ^a	87 (35)
	Mean (SD)
Age (years)	26.2 (8.0)
Age at first vaginal intercourse (years)	14.6 (1.9)
Age of partner at first vaginal intercourse (years)	17.5 (4.1)
Sexual partners (number, lifetime)	22.7 (24.0)
Sexual partners (number, past 3 months)	2.1 (1.8)
Unprotected sex (number of episodes, past 3 months)	17.5 (20.4)
Unprotected sex with steady partner (number of episodes, past 3 months) ^a	19.2 (22.9)
Unprotected sex with nonsteady partner(s) (number of episodes, past 3 months) ^b	3.0 (3.8)
	% (SD)
Unprotected sex (percentage of episodes, past 3 months)	68 (34)
Unprotected sex with steady partner (percentage of episodes, past 3 months) ^a	74 (34)
Unprotected sex with nonsteady partner(s) (percentage of episodes, past 3 months) ^b	51 (37)

^aOnly participants who reported a steady partner, past 3 months.

^bOnly participants who reported nonsteady partner(s), past 3 months. SD, standard deviation; STD, sexually transmitted disease.

older ($p < 0.0001$), and an earlier age of first intercourse ($p < 0.0001$). More partners in the past 3 months was associated with lower income ($p < 0.01$). Reporting more episodes of unprotected sex with a steady partner was associated with less education ($p < 0.05$). Reporting a greater proportion of episodes of unprotected sex in the past 3 months (total and with nonsteady partners) was positively associated with current age ($p < 0.05$). Those who were ever diagnosed with an STD were more likely to be non-Caucasian ($p < 0.0001$) and older ($p < 0.05$). Partner concurrency was associated with a younger age at first intercourse ($p < 0.01$). These demographic variables were included as covariates in the relevant analyses.

Association between age difference at first intercourse and current sexual risk behavior

Bivariate analyses. In bivariate analyses, a greater age difference at first sex was associated with more lifetime sex partners ($p < 0.05$), more episodes of unprotected sex with a steady partner ($p < 0.05$), and a greater proportion of episodes of unprotected sex with a steady partner ($p < 0.05$). Participants who reported recent concurrent partners also reported a greater age difference at first sex ($p < 0.05$).

Multivariate analyses. In multivariate analyses controlling for age at first intercourse and relevant demographic covariates, a greater age difference at first intercourse was associated with more episodes of unprotected sex with a steady partner ($p < 0.05$) and with a greater proportion of episodes of unprotected sex with a steady partner ($p < 0.05$). After controlling for covariates, for each 1-year increase in age difference between partners at first intercourse, there was a 4.5% increase in the number of episodes of unprotected sex with a steady partner and a 1.5% increase in the proportion of episodes of unprotected sex with a steady partner (Table 2).

Because other variables, such as alcohol use or depression, might account for both age difference at first intercourse and current sexual risk behavior, we conducted additional analyses controlling for these variables. In these analyses, a greater age difference at first sex was associated with a greater number and proportion of episodes of unprotected sex with a steady partner in the past 3 months ($p < 0.05$). In addition, after controlling for these variables, a greater age difference at first intercourse was associated with current partner concurrency ($p < 0.05$, odds ratio [OR] 1.09).

Discussion

Numerous studies have reported an association between having an older first sex partner and adolescent sexual risk behavior.^{1-3,6,7} This study is one of the first to report an association between having an older first sex partner and adult sexual risk behavior. A greater age discrepancy at first intercourse was associated with having more episodes of unprotected sex in the past 3 months with a steady partner and with having a greater proportion of episodes of unprotected sex with a steady partner in the past 3 months, even after controlling for demographic covariates, substance use, and depression. Thus, a key finding of this research is that the potential health consequences of having an older first sexual partner appear to extend beyond adolescence into adulthood.

There are several possible explanations for the association between having an older first sex partner and adult sexual risk behavior. An adolescent's early sexual experiences may lay the foundation for the development of his or her interpersonal script for subsequent sexual behavior;²³ if these experiences do not include condom use, as adolescent females' sexual experiences with older partners often do not,^{1,24} these adolescents may develop interpersonal scripts for sexual behavior that do not include condom use. A second possible explanation is that adolescent females who have early sexual experiences with older men may not develop the self-efficacy or skills needed to negotiate condom use or refuse unsafe sex.^{25,26} Greater partner age difference may be associated with sexual risk behavior for adolescent females because of a power imbalance in these relationships.^{1,2,7,27} Not only do females have less power than males in general because of social and political factors,²⁸ but the age difference between adolescents and their older partners may give the older male partners additional power in these relationships. If females lack power in their early sexual encounters, it may be difficult for them to develop the self-efficacy necessary to engage in safer sex.

TABLE 2. MULTIVARIATE ANALYSES PREDICTING ADULT SEXUAL RISK BEHAVIOR FROM AGE DIFFERENCE AT FIRST INTERCOURSE (LINEAR AND LOGISTIC REGRESSION)

	Linear regression models					Logistic regression models			
	No. of partners, lifetime (log) β (95% CI)	No. of partners, 3 months (log) β (95% CI)	No. of episodes unprotected sex (log) β (95% CI)	No. of episodes unprotected sex, steady (log) ^a β (95% CI)	No. of episodes unprotected sex, non-steady (log) ^b β (95% CI)	Proportion episodes unprotected sex, steady ^a β (95% CI)	Proportion episodes unprotected sex, non-steady ^b β (95% CI)	STD diagnosis, ever OR (95% CI)	Partner concurrency ^a OR (95% CI)
Education	0.13* (0.03, 0.24)								
Employment	0.08 (-0.02, 0.19)								
Income	-0.09 (-0.20, 0.01)	0.17** (0.06, 0.29)		0.14* (0.02-0.27)					
Race	0.34*** (0.24, 0.44)								
Current age	-0.28*** (-0.39, -0.18)	0.11 (-0.004, 0.23)	0.01 (-0.11, 0.13)	0.03 (-0.10, 0.16)	-0.16 (-0.34, -0.01)	0.12* (0.01, 0.24)	0.22* (0.05, 0.37)	0.19*** (0.09, 0.40)	1.03 (1.00, 1.07)
Age at first sex	0.04 (-0.07, 0.14)	0.06 (-0.06, 0.18)	0.10 (-0.02, 0.22)	0.13* (0.003, 0.26)	-0.03 (-0.19, 0.14)	0.07 (-0.05, 0.20)	-0.09 (-0.27, 0.08)	1.07** (1.02, 1.13)	0.84* (0.72, 0.97)
Age difference at first sex						0.11 (-0.01, 0.23)	0.03 (-0.13, 0.20)	1.03 (0.92, 1.16)	1.08 (1.00, 1.18)

*Only participants who reported a steady partner, past 3 months.

^aOnly participants who reported nonsteady partner(s), past 3 months.

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

CI, confidence interval; No., number; OR, odds ratio.

Because these data are correlational, we cannot infer a causal link between having an older first sex partner and adult sexual risk behavior. Therefore, it is possible that individual characteristics (e.g., sensation seeking) may lead individuals to seek out older sexual partners during adolescence as well as riskier sexual experiences in adulthood. Longitudinal research that begins in adolescence and studies the context of sexual experiences (e.g., condom use, interpersonal power) as well as individual characteristics is needed to better explain the relation between having an older first sex partner and adult sexual risk behavior.

This study has several strengths, including a large and diverse sample of women who were at risk for STDs and the use of ACASI, which provides more privacy and, therefore, can be expected to elicit more candid self-reports.^{29,30} There are also limitations to the study, however. First, self-report data were used, which are subject to self-presentation and recall biases. Second, participants were women attending an STD clinic, an important group to study because these women are at risk for STD/HIV infection; however, results from this sample should not be assumed to generalize to all women. Third, interpretation of findings would have been strengthened by additional information about participants' first sexual experience, including whether or not a condom was used and more information about the balance of power in the relationship.

Participants who reported that their first sexual experience was nonconsensual (i.e., involved force or threat) were excluded from the current analyses. We excluded these participants in order to determine if consensual childhood sexual experiences were associated with adult sexual risk behavior. Given that numerous studies have already linked childhood sexual abuse with adult sexual risk behavior,¹⁰ the current results should be viewed as a lower bound of the association between having an older first sex partner and adult sexual risk behavior.

Conclusions

These results have important implications for sexual health promotion and for future research. Clinicians working with adult patients might want to increase patients' awareness of how early sexual experiences may influence adult sexual behavior and might explore the influence of early scripts for sexual behavior.²³ These findings suggest that it may be particularly important to develop educational and prevention programs for adolescents before they initiate intercourse. Educators, healthcare providers, and parents should provide adolescents with information about condom use before they begin having intercourse to help ensure that adolescents' early sexual experiences, which may influence the topography of later sexual behavior, include condom use.

Previous research documents that having an older first sex partner puts girls at risk for negative sexual health outcomes (i.e., STDs, HIV, unwanted pregnancy) during adolescence.^{6,7,31} The current research extends previous research and suggests that these women continue to be at risk for negative sexual health outcomes as adults. Longitudinal research is needed to further understand and explain the pathway from first sex with an older partner to adult sexual risk behavior. Research is also needed to understand the interpersonal, relationship, and social factors that lead adolescent girls to have their first sexual experience with an older

partner and the factors that lead men to have sex with younger girls. Qualitative studies are important to describe the factors that lead to adolescent sex with an older partner, as currently there is little empirical work or theory to guide researchers.

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Disclosure Statement

The authors have no conflicts of interest to report.

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