

Greater Expectations: Adolescents' Positive Motivations for Sex

By Mary A. Ott,
Susan G. Millstein,
Susan Ofner and
Bonnie L. Halpern-
Felsher

Mary A. Ott is assistant professor of pediatrics, Section of Adolescent Medicine, Department of Pediatrics; and Susan Ofner is biostatistician II, Section of Biostatistics, Department of Medicine—both at Indiana University, Indianapolis. Susan G. Millstein is professor of pediatrics, and Bonnie L. Halpern-Felsher is associate professor of pediatrics, both at the Division of Adolescent Medicine, Department of Pediatrics, University of California, San Francisco.

CONTEXT: Effective STD and pregnancy prevention efforts should benefit from knowledge of what motivates adolescents to have sex. Positive motivations, and how they differ by gender and sexual experience, are poorly understood.

METHODS: A sample of 637 ninth graders were asked about their relationship goals, expectations of the degree to which sex would satisfy these goals and sexual experience. Three scales measured adolescents' goals for intimacy, sexual pleasure and social status within a romantic relationship. Another three scales measured expectations that sex would lead to these goals. Data were examined in analyses of variance and mixed models.

RESULTS: Participants valued intimacy the most, then social status and, finally, sexual pleasure. These relationship goals differed significantly by gender and sexual experience. Females valued intimacy significantly more and sexual pleasure less than males. Sexually experienced adolescents valued both intimacy and pleasure more than sexually inexperienced adolescents. Among females, but not males, sexually experienced adolescents valued the goal of social status less than those with no sexual experience did. Adolescents expected that sex would most likely lead to sexual pleasure, then intimacy and, finally, social status. Females and sexually inexperienced adolescents reported lower expectations that sex would meet goals than did males and sexually experienced participants.

CONCLUSIONS: Adolescents view intimacy, sexual pleasure and social status as important goals in a relationship. Many have strong positive expectations that sex would satisfy these goals. Prevention programs and providers should address the risks of sex in the context of expected benefits.

Perspectives on Sexual and Reproductive Health, 2006, 38(2):84–89

The public health focus on HIV and other STDs over the past decade has led to an extensive literature on adolescents' perceptions of the risks associated with sexual behaviors.¹ However, while perceived risks tell us what motivates adolescents to be abstinent or practice safer sex, they do not tell us what draws adolescents to have sex. The failure of interventions that focus only on the dangers of sexual behaviors, such as "abstinence-only" programs,² underlines the importance of pregnancy and STD prevention programs' understanding and addressing adolescents' positive motivations for sex.

Theory and research suggest that sexual behavior is influenced by positive motivations for sex, which may be physical (the desire for feelings of excitement or pleasure³), relationship-oriented (the desire for intimacy⁴), social (the desire for peer approval⁵ or respect⁶) or individual (the desire to gain a sense of competence⁷ and learn more about oneself⁸). Normative decision theory states that perceived benefits are an important component of behavioral decisions.⁹

Research with late adolescents and young adults has found that perceived benefits may be at least as motivating as perceived risks in sexual decision making. In one sample of college students, a global measure of perceived benefits of unprotected sex was a better predictor of unprotected sex than were measures of perceived risks of unprotected sex or per-

ceived costs of condom use.¹⁰ In another sample, college students' perceptions of the benefits of having sex and of having sex without a condom predicted sexual behavior during a three-month period.¹¹ Among late adolescents, having sex for intimacy and to express love has been shown to predict unprotected sex.¹² However, research on late adolescents and young adults may not be applicable to a younger population, who have less developed cognitive and interpersonal skills, and less experience with interpersonal and romantic relationships.¹³ Similarly, early adolescents' motivations in romantic and sexual relationships likely differ from late adolescents', and interventions geared toward the motivations of late adolescents may be less applicable to early adolescents.

Peer approval has been examined as a positive motivation among early adolescents, and has been associated with an early onset of sex.¹⁴ However, we found only one study that broadly and systematically examined positive motivations for sex among early adolescents. In a sample of youth at very high risk (mean age, 11.1 years; 35% sexually experienced), individual motivations (physical pleasure and a sense of feeling like a man or woman) predicted intention to have sex, and relationship and peer-oriented motivations (the belief that pregnancy would strengthen a relationship or the desire to be thought of as a virgin) predicted both intention to engage in sex and doing so.¹⁵

Positive motivations for sex need to be broadly exam-

ined in a representative sample of young adolescents. In this article, we examine how a multiethnic, school-based sample of ninth graders perceive the goals of intimacy, sexual pleasure and social status within a romantic relationship; whether they expect sex to fulfill these relationship goals; differences in goals and expectations by gender and sexual experience; and the relative importance the adolescents attach to these goals and expectations.

METHODS

Recruitment

This cross-sectional study, based on a survey conducted in the fall and winter of 2002–2003, was part of a larger project on adolescent sexual behaviors and beliefs. After obtaining institutional review board approval, we identified and contacted 23 large socioeconomically and ethnically diverse schools in Northern California, using a state database. Two schools refused to participate in the project, and 16 did not obtain needed district approvals. Of the remaining five, two met recruitment deadlines and participated. All 1,180 students in ninth-grade health or social studies classes were invited to take the self-administered survey; 665 (56%) consented and returned a parental consent form. Of these, 96% completed the survey, for a final sample size of 637.

Measures

Using expectancy-value theory as a general framework, we conceptualized positive motivations for sex as consisting of two broad dimensions: an adolescent's goals for a relationship (often referred to as values), and the adolescent's expectations that sex would facilitate the achievement of those goals (often referred to as expectancies).¹⁶ To avoid confusion about the meaning of "sex,"¹⁷ the term was defined at the start of the survey as "vaginal, 'regular sex,' or 'going all the way' (where the male's penis is inserted into the female's vagina)."

We developed three scales measuring each dimension of motivation. The goals scales measured an adolescent's relationship goals for intimacy, sexual pleasure and social status. These constructs were identified through qualitative interviews¹⁸ and a review of the literature on developmental psychology and on adolescent STD and pregnancy prevention. Items were either adapted from published sources¹⁹ or, if no published sources were available, created by the authors. All items were reviewed for face and content validity, and then pilot-tested for readability and saliency. Respondents were asked to rate the importance of each goal (six for intimacy, five for sexual pleasure and six for social status*) on an 11-point scale ranging from "not important" to "extremely important." Scales measuring relationship goals showed good reliability. Overall Cronbach's alphas were 0.86 for intimacy, 0.89 for sexual pleasure and 0.84 for social status; alphas ranged from 0.72 to 0.89 among groups based on gender and sexual experience.

Mirroring the goals scales, the three expectations scales measured adolescents' expectations that sex would meet their goals for intimacy, sexual pleasure and social status.

Participants were told, "We are interested in your ideas about what you think would happen if you had sex," and then were asked to indicate their expectations of selected outcomes (four each for intimacy and sexual pleasure, and five for social status[†]), using an 11-point scale ranging from "definitely would happen" to "definitely would not happen." Overall Cronbach's alphas were 0.93 for expectations that sex would lead to increased intimacy, 0.90 for sexual pleasure expectations and 0.93 for social status expectations; among groups based on gender and sexual experience, alphas ranged from 0.84 to 0.93.

We measured sexual activity by asking the number of times a respondent had; ever engaged in vaginal sex. The distribution was skewed, 87% of adolescents had never had vaginal sex. We therefore dichotomized responses to "sexually experienced" and "sexually inexperienced."

Demographic information collected was gender, race and ethnicity (a single item), and age.

Data Analysis

We conducted two main sets of analyses, looking first at how specific goals and expectations differed by gender and sexual experience, and then at how participants discriminated among sets of goals and expectations. Before conducting those analyses, we tested for school differences by examining possible interactions among school, gender and sexual experience. We used analysis of variance (ANOVA) models for all goals and expectations except the goal of intimacy, which was highly skewed; the nonparametric Wilcoxon rank sum test was used for the goal of intimacy. The only difference between schools was in the goal of pleasure. When school, gender and sexual experience were all included in the ANOVA model with sexual pleasure, two-way interaction terms were not significant at $p < .10$. Therefore, all analyses used data from both schools combined. We also tested differences in sexual experience by gender, using chi-square and odds ratios.

In the first main set of analyses, we examined differences by gender and sexual experience in relationship goals and expectations that sex would meet those goals. For each goal and expectation, an ANOVA model was used to assess the effect of gender and sexual experience; the model included those variables and their interaction. Only the goal of social status and the expectation of intimacy showed a significant interaction between gender and sexual experience at $p < .10$. (This higher p value was used to explore interactions because we did not want to miss clinically significant

*For example, intimacy goals included "to feel close to a boyfriend," "to feel loved" and "to have a boyfriend really committed to you." Sexual pleasure goals included "to feel physically turned on by a boyfriend" and "to feel sexually attracted to a boyfriend." Social status goals included "to be respected by others" and "to fit in with the crowd."

†All expectations were phrased in terms of "If I have sex..." Intimacy expectations included "I will feel closer to a boyfriend" and "it will strengthen our relationship." Sexual pleasure expectations included "it will release my sexual feelings" and "it will feel physically good." Social status expectations included "I will be respected" and "I will fit in with the crowd."

TABLE 1. Adjusted means (and standard errors) from analyses of variance assessing adolescents' relationship goals and expectations of whether having sex would help achieve those goals, by gender and sexual experience

Measure	Mean
GOAL OF INTIMACY	
Gender	
Female	731.22 (22.30)***
Male	625.28 (22.90)
<i>F=17.8, df=1,526</i>	
Sexually experienced	
No	633.29 (13.39)*
Yes	723.21 (35.21)
<i>F=5.7, df=1,526</i>	
GOAL OF PLEASURE	
Gender	
Female	5.43 (0.20)***
Male	6.95 (0.21)
<i>F=44.2, df=1.525</i>	
Sexually experienced	
No	5.24 (0.12)***
Yes	7.15 (0.32)
<i>F=30.2, df=1.525</i>	
GOAL OF SOCIAL STATUS	
Gender x sexual experience	
Female x no sexual experience	7.05 (0.13)
Female x sexual experience	6.12 (0.39)†
Male x no sexual experience	6.69 (0.15)‡
Male x sexual experience	6.85 (0.35)
<i>For interaction, F=3.72, df=1,529</i>	
EXPECTATION OF INTIMACY	
Gender x sexual experience	
Female x no sexual experience	4.08 (0.18)
Female x sexual experience	6.84 (0.54)§
Male x no sexual experience	5.43 (0.21)§
Male x sexual experience	6.81 (0.51)††
<i>For interaction, F=3.0, df=1,493</i>	
EXPECTATION OF PLEASURE	
Gender	
Female	5.34 (0.23)***
Male	6.83 (0.24)
<i>F=32.5, df=1,496</i>	
Sexually experienced	
No	5.25 (0.14)***
Yes	6.93 (0.37)
<i>F=18.0, df=1,496</i>	
EXPECTATION OF SOCIAL STATUS	
Gender	
Female	3.14 (0.20)***
Male	4.65 (0.21)
<i>F=43.7, df=1,492</i>	
Sexually experienced	
No	3.38 (0.12)**
Yes	4.41 (0.33)
<i>F=8.8, df=1,496</i>	

*p<.05. **p<.01. ***p<.001. †Significantly different from sexually inexperienced female at p<.05. ‡Significantly different from sexually inexperienced female at p<.01. §Significantly different from sexually inexperienced female at p<.001. ††Significantly different from sexually inexperienced male at p=.01. Note: Participants rated each goal on a scale of 0 ("not important") to 10 ("extremely important"), and each expectation from 0 ("definitely would happen") to 10 ("definitely would not happen"). For goal of intimacy, results shown are cubic transformations to adjust for deviation from the model assumption of homogeneity of variance.

interactions as a result of limited power from small cell sizes.) The remaining goals and expectations were analyzed using an ANOVA model with only the main effects of gender and sexual experience. Residual plots were examined for possible violation of model assumptions of normality and homogeneity of variance. Only the goal of intimacy residuals deviated from the model assumption of homogeneity of variance. A Box-Cox²⁰ analysis revealed that a cubic transformation of those data would remedy these violations, so the goal of intimacy was analyzed using that transformation. For ANOVA models without significant interaction terms, we report adjusted means. Means for gender are adjusted for sexual experience, and means for sexual experience are adjusted for gender.

In the second set of analyses, we used a mixed model to assess how participants discriminated among the three relationship goals. The model included an independent term for goals and a random effect for participant; the random effect allowed us to model correlations in responses from the same participant. We repeated this analysis to assess how participants discriminated among the expectations that sex would result in each of the goals.

SAS version 9.1 was used for all analyses. S-Plus version 6.2 was used for the Box-Cox analysis.

RESULTS

Participants

The sample of 637 adolescents was 57% female, with a mean age of 14.1 years (standard deviation, 0.47). Participants represented diverse racial and ethnic backgrounds; 40% were white, 24% Latino, 24% Asian or Pacific Islander, 3% black, and 9% of other or mixed backgrounds. Fifty-five percent were from one high school, and 45% from the other. Of the 614 participants who responded to the question about sexual experience, 13% were sexually experienced. The proportion sexually experienced was 17% among males and 10% among females; this difference was statistically significant (odds ratio, 1.7; confidence interval, 1.1–2.7; p<.05).

Differences in Goals and Expectations

Compared with males, females considered intimacy significantly more important as a relationship goal (mean, 731.22 vs. 625.28—Table 1) and considered pleasure significantly less important (5.43 vs. 6.95). On average, participants with sexual experience attached significantly more importance to intimacy (723.21) and to pleasure (7.15) as relationship goals than did participants without sexual experience (633.29 and 5.24, respectively).

Although we found no main effects for the relationship goal of social status, gender and sexual experience had a significant interaction. Sexually experienced females valued the goal of social status less than females without sexual experience (mean, 6.12 vs. 7.05). In contrast, we found no significant differences between sexually experienced and inexperienced males (6.85 and 6.69, respectively).

For expectations that sex would lead to intimacy, we found a significant interaction between gender and sexual

experience. Participants with sexual experience had higher expectations that sex would lead to intimacy (mean, 6.84 for females and 6.81 for males) than did participants with no sexual experience (4.08 and 5.43, respectively). Furthermore, males with no sexual experience reported higher mean expectation of intimacy than females with no sexual experience. There was no difference between males and females in mean expectation of intimacy among participants with sexual experience.

Males reported significantly higher mean expectations that sex would result in pleasure (6.83) and social status (4.65) than did females (5.34 and 3.14, respectively). Sexually experienced respondents reported significantly higher mean expectations that sex would result in pleasure (6.93) and social status (4.41) than did those with no sexual experience (5.25 and 3.38, respectively).

Discrimination Among Goals and Expectations

Participants made significant discriminations in the relative importance of the three relationship goals. They rated intimacy as the most important goal in a relationship, followed by social status and, finally, sexual pleasure (Table 2). Males and females ranked the three goal items in the same order. However, the difference between the importance of intimacy and the importance of pleasure was significantly larger for females than for males, as was the difference between the importance of pleasure and the importance of social status ($p < .001$ for both).

Both participants with and those without sexual experience ranked intimacy as a significantly more important goal than either pleasure or social status. The difference between the importance of intimacy and the importance of pleasure was significantly greater for respondents with no sexual experience than for those with sexual experience, and the difference between the importance of pleasure and the importance of social status was greater for sexually experienced than inexperienced respondents ($p < .001$ in both cases).

Adolescents also discriminated in their expectations that sex would meet different relationship goals. They expected sex to be most likely to result in sexual pleasure, followed by intimacy and then social status. The sequence was similar for males and females. However, females showed no significant difference, on average, between expectations that sex would result in pleasure and expectations that it would lead to intimacy, while males had a significantly higher expectation that sex would result in pleasure than in intimacy. Both genders reported significantly higher expectations that sex would result in pleasure or intimacy than in social status.

Both sexually experienced and inexperienced participants expected sex to most likely result in pleasure. Among respondents with no sexual experience, pleasure was a significantly stronger expectation than intimacy. Participants with sexual experience considered sex equally likely to result in pleasure and intimacy. Both sexually experienced and inexperienced participants had stronger expectations that sex would result in intimacy than in social status.

TABLE 2. Mean differences (and standard errors) from analyses assessing how adolescents discriminate among relationship goals and expectations that having sex would help achieve those goals, by gender and sexual experience

Goals and expectations	All	Gender		Sexually experienced	
		Male	Female	Yes	No
Goals					
Intimacy vs. pleasure	3.0 (0.1)***	1.7 (0.2)***	3.9 (0.2)***	1.5 (0.4)***	3.2 (0.2)***
Intimacy vs. social status	1.5 (0.1)***	1.3 (0.2)***	1.6 (0.2)***	2.2 (0.4)***	1.4 (0.2)***
Pleasure vs. social status	-1.5 (0.1)***	-0.5 (0.2)*	-2.3 (0.2)***	0.7 (0.4)	-1.8 (0.2)***
Expectations					
Intimacy vs. pleasure	-0.4 (0.2)*	-0.6 (0.3)*	-0.3 (0.2)	-0.2 (0.5)	-0.5 (0.2)*
Intimacy vs. social status	1.5 (0.2)***	1.3 (0.3)***	1.7 (0.2)***	2.4 (0.5)***	1.4 (0.2)***
Pleasure vs. social status	2.0 (0.2)***	2.0 (0.3)***	2.0 (0.2)***	2.5 (0.5)***	1.9 (0.2)***

* $p < .05$. *** $p < .001$.

DISCUSSION

In our sample, young adolescents viewed intimacy, sexual pleasure and social status as important goals in a relationship, and many had strong expectations that sex would satisfy these goals. These goals and expectations differed by gender and sexual experience. With these findings, our article extends the understanding of how positive motivations influence adolescent sexual behaviors.

Our division of positive motivations into relationship goals and expectations that sex would meet these goals allowed us to delineate the gender differences in positive motivations for sex. Although females considered intimacy and, to some extent, social status more important than males did, they had significantly lower expectations than males that sex would meet any of the goals studied. These findings raise the question of whether young women may meet these relationship goals with noncoital behaviors, such as hand-holding or spending time with a partner.

The interaction among social status goals, gender and sexual experience highlights gender differences and provides empiric support for the gender double standard, by which sex improves social status for young men, but jeopardizes it for young women.²¹ For male participants, sexual experience was not related to social status goals. However, sexually experienced female participants valued social status less than their sexually inexperienced counterparts. As our data are cross-sectional, we do not know whether young women who value social status less are more likely than others to have sex or whether young women who have sex downgrade their perception of the value of social status. This association between sexual experience and lower social status goals suggests that sex is a social liability for females.

Our findings challenge conventional beliefs about males, and paint a complex picture of male sexuality. Young men have been portrayed as driven by biologic drives rather than emotional needs,²² although data addressing these assertions are mixed.²³ In this school-based sample of ninth graders, young men valued intimacy as a more important relationship goal than sexual pleasure or social status. Our findings are consistent with the relationship literature, which suggests that interpersonal relationships are important to

males,²⁴ and speak to the need for clinicians to better understand and address all aspects of young men's sexuality.

Sexually experienced participants differed from sexually inexperienced ones in important ways. Sexually experienced participants valued sexual pleasure as a goal more than their sexually inexperienced counterparts, and reported higher expectations that sex would meet their goals for intimacy, sexual pleasure and social status. It is not possible to determine the direction of causality for the relationship between sexual experience and these positive motivations for sex. While behavioral theory predicts that attitudes shape behavior,²⁵ longitudinal research among adolescents suggests that behavioral experience and attitudes may affect each other.²⁶

This study's primary limitation is its cross-sectional design, which prevents us from examining causality. A second limitation, the small number of sexually experienced participants and resulting unbalanced analytic design, our power to detect differences. A third limitation is that we did not specifically ask about behaviors and attitudes related to sexual minority youth, such as having same-gender sex partners. Finally, the possibility of socially desirable responses is always a concern with surveys of sensitive behaviors, such as ours. We addressed the potential for social desirability by using an 11-point scale, balancing the direction of the scaling among items and pilot-testing items for variability. We observed good across-subject variability for all expectations scales and the goals scales of sexual pleasure and social status. Intimacy was more skewed in its distribution, but it is not clear if this reflects elements of response bias or human value in intimacy and seeking love; if the latter, we might expect to see skewed responses.

Longitudinal research is needed to address issues of causality and how the interactions among goals, expectations, gender and sexual experience relate to behavior. Research is also needed to examine how positive motivations for sex relate to noncoital sexual behaviors, such as oral sex.

Adolescent sexuality is commonly conceptualized in a risk-based framework, and interventions, particularly federally funded "abstinence-only" programs,²⁷ typically focus on the risks of pregnancy and STDs. Yet this approach captures only negative consequences of sexual activity, ignoring potentially positive aspects, such as developing a sense of intimacy, achieving social skills and goals, and experiencing sexual pleasure. The motivational strength of these positive expectations is important in interventions geared toward college students,²⁸ and is likely important for younger adolescents as well. Individual clinicians and programs to prevent adolescent pregnancy and STDs may be most successful if they recognize the interpersonal and social benefits of sexual behavior alongside the risks of pregnancy and STDs. Knowledge of adolescents' relationship goals may enable programs and clinicians to better meet adolescents' needs by addressing alternative ways to express sexuality and achieve relationship goals. For example, one might target adolescents' need for intimacy in relationships and offer suggestions and skills building related to noncoital

ways to achieve closeness and connection. Programs and clinicians need to speak to an at-risk population in a language they understand, addressing the perceived benefits of sex as well as perceived risks. Communication about abstinence and sexual behaviors is likely to be enhanced, and rapport improved, if programs and clinicians recognize the competing positive and negative motivations for sex.

REFERENCES

1. Crosby RA et al., Correlates of unprotected vaginal sex among African American female adolescents: importance of relationship dynamics, *Archives of Pediatrics and Adolescent Medicine*, 2000, 154(9): 893–899; Ellen JM et al., Adolescent condom use and perceptions of risk for sexually transmitted diseases: a prospective study, *Sexually Transmitted Diseases*, 2002, 29(12):756–762; Ott MA et al., The trade-off between hormonal contraceptives and condoms among adolescents, *Perspectives on Sexual and Reproductive Health*, 2002, 34(1): 6–14; Millstein SG and Halpern-Felsher BL, Perceptions of risk and vulnerability, *Journal of Adolescent Health*, 2002, 31(1 Suppl.):10–27; and Ellen JM et al., Adolescents' perceived risk for STDs and HIV infection, *Journal of Adolescent Health*, 1996, 18(3):177–181.
2. Manlove J, Romano-Papillo A and Ikramullah E, *Not Yet: Programs to Delay First Sex Among Teens*, Washington, DC: National Campaign to Prevent Teen Pregnancy, 2004; and Kirby D, *Emerging Answers: Research Findings on Programs to Reduce Teen Pregnancy*, Washington, DC: National Campaign to Prevent Teen Pregnancy, 2001.
3. Parsons JT et al., Perceptions of the benefits and costs associated with condom use and unprotected sex among late adolescent college students, *Journal of Adolescence*, 2000, 23(4):377–391.
4. Tschann JM et al., Relative power between sexual partners and condom use among adolescents, *Journal of Adolescent Health*, 2002, 31(1):17–25; Sanderson CA and Cantor N, Social dating goals in late adolescence: implications for safer sexual activity, *Journal of Personality and Social Psychology*, 1995, 68(6):1121–1134; and Gebhardt WA, Kuyper L and Greunsvan G, Need for intimacy in relationships and motives for sex and determinants of adolescent condom use, *Journal of Adolescent Health*, 2003, 33(3):154–164.
5. Kinsman SB et al., Early sexual initiation: the role of peer norms, *Pediatrics*, 1998, 102(5):1185–1192.
6. Stanton B et al., Sexual practices and intentions among preadolescent and early adolescent low-income urban African-Americans, *Pediatrics*, 1994, 93(6, pt. 1):966–973.
7. Ibid.
8. Sanderson CA and Cantor N, 1995, op. cit. (see reference 4).
9. Furby L and Beyth-Marom R, *Risk Taking in Adolescence: A Decision-Making Perspective*, Washington, DC: Carnegie Council on Adolescent Development, 1990.
10. Parsons JT et al., 2000, op. cit. (see reference 3).
11. Parsons JT, Siegel AW and Cousins JH, Late adolescent risk-taking: effects of perceived benefits and perceived risks on behavioral intentions and behavioral change, *Journal of Adolescence*, 1997, 20(4): 381–392.
12. Gebhardt WA, Kuyper L and Greunsvan G, 2003, op. cit. (see reference 4).
13. Furman W and Wehner EA, Adolescent romantic relationships: a developmental perspective, in: Shulman S and Collins WA, eds., *Romantic Relationships in Adolescence: Developmental Perspectives*, San Francisco: Jossey-Bass Publishers, 1997; Collins WA and Sroufe LA, Capacity for intimate relationships: a developmental construction, in: Furman W and Brown BB, eds., *The Development of Romantic Relationships in Adolescence*, New York: Cambridge University Press, 1999, pp. 125–147.

14. Kinsman SB et al., 1998, op. cit. (see reference 5); and Rosenthal SL et al., Sexual initiation: predictors and developmental trends, *Sexually Transmitted Diseases*, 2001, 28(9):527–532.
15. Stanton B et al., 1994, op. cit. (see reference 6).
16. Eagly AH and Chaiken S, *The Psychology of Attitudes*, Fort Worth, TX: Harcourt Brace Jovanovich College Publishers, 1993; and Ajzen I and Fishbein M, *Understanding Attitudes and Predicting Social Behavior*, Englewood Cliffs, NJ: Prentice-Hall, 1980.
17. Sanders SA and Reinisch JM, Would you say you “had sex” if...? *Journal of the American Medical Association*, 1999, 281(3):275–277.
18. Eyre SL and Millstein SG, What leads to sex? adolescent preferred partners and reasons for sex, *Journal of Research on Adolescence*, 1999, 9(3):277–307.
19. Parsons JT et al., 2000, op. cit. (see reference 3); Gebhardt WA, Kuyper L and Greunsvan G, 2003, op. cit. (see reference 4); Rosenthal SL et al., 2001, op. cit. (see reference 14); and Rosengard C et al., Perceived STD risk, relationship, and health values in adolescents’ delaying sexual intercourse with new partners, *Sexually Transmitted Infections*, 2004, 80(2):130–137.
20. Box GEP and Cox DR, An analysis of transformations, *Journal of the Royal Statistical Society*, 1964, Series B, No. 26, pp. 211–252.
21. Furman WS and Shaffer L, The role of romantic relationships in adolescent development, in: Florsheim P, ed., *Adolescent Romantic Relations and Sexual Behavior*, Mahwah, NJ: Lawrence Erlbaum Associates, 2003, pp. 3–22.
22. Udry JR et al., Serum androgenic hormones motivate sexual behavior in adolescent boys, *Fertility and Sterility*, 1985, 43(1):90–94.
23. Halpern CT, Biological influences on adolescent romantic and sexual behavior, in: Florsheim P, 2003, op. cit. (see reference 21), pp. 57–84; and De Gaston JF, Weed S and Jensen L, Understanding gender differences in adolescent sexuality, *Adolescence*, 1996, 31(121): 217–231.
24. Shulman S and Seiffge-Krenke I, Adolescent romance: between experience and relationships, *Journal of Adolescence*, 2001, 24(3): 417–428.
25. Ajzen I and Fishbein M, 1980, op. cit. (see reference 16); and Fishbein M et al., Using intervention theory to model factors influencing behavior change: Project Respect, *Evaluation & the Health Professions*, 2001, 24(4):363–384.
26. Gerrard M et al., A longitudinal study of the reciprocal nature of risk behaviors and cognitions in adolescents: what you do shapes what you think, and vice versa, *Health Psychology*, 1996, 15(5):344–354.
27. Section 510 of the Social Security Act, 42 U.S.C. 710 (2004).
28. Sanderson CA and Cantor N, 1995, op. cit. (see reference 4).

Acknowledgments

This research was funded by National Institute of Child Health and Human Development grant R01 HD41349 and by the Department of Pediatrics, Indiana University School of Medicine.

Author contact: maott@iupui.edu