

Relationship Characteristics and Contraceptive Use Among Young Adults

CONTEXT: Young adults have high rates of unintended childbearing and STDs, yet little research has examined the role of relationship characteristics in their contraceptive use.

METHODS: Data collected from the 2002–2005 rounds of the National Longitudinal Survey of Youth yielded a sample of 4,014 dating relationships among sexually active 18–26-year-olds. Bivariate analysis and multivariate logistic and multinomial logistic regressions assessed associations between relationship characteristics and contraceptive use at last sex.

RESULTS: In three-quarters of the relationships, respondents had used some method at last intercourse; respondents in 26% of the relationships had used a condom only, in 26% a hormonal method only and in 23% dual methods. Compared with respondents in relationships in which first sex occurred within two months of starting to date, those who first had sex before dating were more likely to have used any method at last sex (odds ratio, 1.4), particularly condoms or dual methods (relative risk ratio, 1.5 for each). The relative risk of using a hormonal method only, rather than no method or condoms only, increased with relationship duration (1.01) and level of intimacy (1.1–1.2). Discussing marriage or cohabitation was associated with reduced odds of having used any method (0.7) and a reduced relative risk of having used condoms alone or dual methods (0.6 for each). Increasing levels of partner conflict and asymmetry were also linked to reduced odds of any method use (0.97 and 0.90, respectively).

CONCLUSIONS: Prevention programs should address relationship context in contraceptive decision making, perhaps by combining relationship and sex education curricula to foster communication and negotiation skills.

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The major focus of pregnancy and STD prevention is on adolescents in middle school and high school. However, individuals in their late teens and early 20s—young adults or “emerging adults”—have the highest rates of unintended pregnancy in the United States,¹ as well as high rates of STDs.^{2,3} During this developmental stage, when youth are transitioning to increased independence, many individuals are not married or cohabiting, yet are sexually active.^{4,5} Reducing rates of unintended pregnancy and STDs among young adults requires consistent use of contraceptives for pregnancy prevention, condoms for disease prevention or dual methods for both. Thus, a better understanding of the factors associated with contraceptive use among young adults can help inform policy and program efforts to improve reproductive health outcomes among this population.

Distinct domains of adult romantic relationships, as identified by “healthy marriage” research, include relationship duration, intimacy and commitment, and lack of violence or conflict.⁶ An expanding literature focusing on teenage populations suggests that many of these same dimensions—as well as asymmetries between partners with respect to age, race or ethnicity, and education—may be associated with contraceptive use.^{7–11} Dating or romantic relationships in young adulthood, however, tend to

be longer term and more serious than adolescent dating relationships, and reflect higher levels of commitment,¹² yet, little research has focused on the role of relationship characteristics in contraceptive use among young adults. Understanding this role is important because relationship and contraceptive patterns established during young adulthood may set the course for relationships into adulthood.⁵

The study described here focused on young adult populations and examined multiple relationship dimensions and their association with contraceptive use. Specifically, we examined method use at last sex, and assessed how characteristics measured at the beginning of the relationship and those measured over its course were associated with use.

BACKGROUND

Influences of Relationship Context

Research linking relationship context to contraceptive use supports the life course principle that individual behavior can be understood only within the context of a person's relationships.¹³ This approach may be particularly applicable in studies regarding the contraceptive behavior of young adults, since the influence of family origin characteristics on sexual behavior becomes less salient as youth

get older.¹⁴ Over the past decade, studies have examined the association between characteristics of the romantic relationship dyad and contraceptive use;^{7,8,10,15,16} this research has focused on teenagers, and the primary outcomes of interest have been any contraceptive or condom use and the consistency of use. Very few studies^{15,16} have examined the association between relationship context and use of specific methods.

Research on relationship characteristics and contraceptive use generally employs one of three overlapping conceptual frameworks: the sawtooth hypothesis, the communication model or the power dynamics model.

•**Sawtooth hypothesis.** The sawtooth hypothesis posits that condom use is relatively high in casual relationships and declines with greater relationship duration, intimacy and commitment (and rises again at the start of a new relationship).¹⁷ This hypothesis is supported by an extensive literature documenting reduced condom use in longer relationships and with main or steady partners, as compared with casual partners.¹¹ As relationships lengthen and become more serious, many couples move away from coitus-dependent methods, because they no longer perceive their partner as an STD risk, and transition to longer acting, hormonal methods.^{11,17}

•**Communication model.** The communication model posits that overall contraceptive use rises as partners' knowledge of each other, time together and level of intimacy increase.⁷ This model is supported by research showing that longer relationships are linked to increased odds of ever-use of a contraceptive (but decreased odds of consistent use).^{8,10,11} One study that examined associations between intimacy and overall contraceptive use found that among teenagers, participating in a greater number of intimate activities with a sexual partner before first having sex was associated with increased contraceptive use and consistent use in that relationship.¹⁸ Additionally, other research found that knowing a sexual partner for a longer period of time prior to dating (i.e., having a longer "pre-sexual relationship") was associated with elevated odds of teenagers' using contraceptives consistently.¹⁹ However, some research suggests that teenagers and young adults may reduce the consistency of their contraceptive use in relationships with more serious partners, possibly because they are occasionally willing to forgo use in a committed relationship.^{8,20}

A communication approach—consistent with the sawtooth hypothesis—also suggests that relationship duration, intimacy and commitment are associated with increased hormonal method use and reduced condom use. This hypothesis has been supported by various studies, including ones that found that high levels of emotional closeness and relationship commitment were associated with reduced condom use and consistency, and increased hormonal method use.^{7,9,11,17} Another study found greater use of hormonal methods in more serious relationships, as defined by the combination of frequency of sex and relationship type and duration.¹⁵ A communication model

also suggests that relationship conflict will be associated with the reduced use of contraceptives—particularly coitus-dependent methods—because of communication barriers in high-conflict relationships.²¹

Finally, a communication approach posits that partner asymmetries regarding age, race or ethnicity, and educational attainment may be linked to reduced contraceptive use because they create a lower degree of comfort in communicating about sex and contraception. Several studies have found that having an older partner is associated with reduced condom use, contraceptive use and consistency of use among female teenagers in particular (some also found these associations among males), in part because of communication barriers and power differentials in relationships with large age differences.^{10,15,22} In other research, a larger age difference between partners was linked with reduced contraceptive use.⁸ Racial or ethnic asymmetries have also been linked with method use. For example, adolescents reporting partners of a different race or ethnicity have been shown to have an elevated likelihood of having ever used a condom, but a reduced likelihood of using hormonal methods (rather than no method or a condom), in part because of communication and trust issues.^{10,15} Asymmetry regarding educational attainment has also been assessed as one dimension of relationship power that may influence contraceptive use,^{10,23} although studies with teenage populations have found no association.¹⁰

•**Power dynamics model.** A power dynamics model examines whether relationship conflict or violence is linked to power differentials, which are associated with reduced contraceptive use.²² Most research using this approach has focused on nonvoluntary sex or forced sexual encounters among women, and found reduced levels of contraceptive use—particularly condom use—in relationships characterized by these experiences.^{24,25} A study that included a broader measure of relationship conflict, based on the frequency of disagreements or arguments between teenage partners and the frequency with which partners yelled at one another, found that increased conflict was associated with reduced odds of consistent condom use among females, but not males.⁷ Other research has suggested that verbal or physical violence is associated with reduced consistency of contraceptive use.¹⁸

Individual and Family Influences

Several measures of individual and family characteristics have been linked with contraceptive use. Lower education levels,²⁶ older current age^{17,27} and a younger age at first sex^{24,28} have all been associated with reduced use. Although blacks and Latinos have lower levels of overall method use and pill use than whites,^{10,15,16,26} blacks have higher levels of condom use than whites.^{16,29} Furthermore, having a mother with a higher level of education and living with two parents as a teenager have been associated with greater contraceptive use, including use of the pill, rather than condoms.^{8,15} Being unemployed has been linked to having multiple sexual partners,³⁰ yet its ultimate

link to contraceptive use is unclear.^{27,31,32} Finally, unmarried young adults who have experienced a pregnancy or birth have reduced levels of contraceptive use.¹⁵

HYPOTHESES

The three conceptual frameworks led us to focus on four relationship domains: relationship duration, intimacy and commitment, partner violence or conflict, and partner asymmetries. A review of the literature suggested that relationship context would have different associations with any contraceptive use and use of specific methods (condom only, hormonal only and dual methods). On the basis of the sawtooth hypothesis, we expected relationship duration to be negatively associated with condom use and dual method use, reflective of a shift over time from coitus-based methods and disease prevention to greater hormonal method use.^{17,27} Considering the communication model, we anticipated that higher levels of intimacy and commitment within relationships would be positively associated with overall contraceptive use, in part because of better communication between partners.^{28,33} Drawing from the power dynamics and communication models, we expected conflict within relationships and partner asymmetries to be linked to reduced overall method use, particularly condom use, because of potential unequal power dynamics and poor communication.^{7,22} Finally, because some studies have found that relationship factors are more strongly associated with contraceptive use behaviors among females than among males,^{15,34} we anticipated that such characteristics would more strongly predict method choice for females than for males.

METHODS

Sample

We used data from multiple interviews of the 1997 cohort of the National Longitudinal Survey of Youth (NLSY); this cohort comprises a nationally representative sample of 8,984 youth who were aged 12–16 at baseline. These data provide valuable information on respondents' dating relationships, sexual experiences, family background and demographic characteristics. Although youth were interviewed in every year starting in 1997, we included data only from 2002–2005 (Rounds 6–9) because respondents were not asked about their dating partner until Round 6. Respondents in our sample were aged 18–26, the range that best captures the period of emerging adulthood in the United States.⁵

Our analytic sample was restricted to respondents who were sexually active and reported being in a dating relationship during at least one of the four interview rounds. We considered a respondent to be in a dating relationship if he or she answered yes to the question "Since [date of last interview], have you been in a dating relationship in which you thought of yourself as part of a couple?" and defined the respective partner as a "current dating partner," as opposed to a spouse, cohabiting partner or former partner. This analysis is limited to current partners, as the

full set of relationship questions was asked only of those in current relationships. Overall, 4,013 respondents were in a dating relationship during the study period. Of the remainder, 553 were not interviewed during the rounds of interest, 1,876 were cohabiting or married, and 2,542 had no current dating relationships.*

From these data, we created a file of 4,574 unique relationships. A respondent could have up to four relationships if he or she was dating a different partner at each interview; however, 85% of respondents contributed just one relationship, and only one respondent contributed three. Relationships that spanned multiple rounds were included once, and partner and relationship characteristics were measured at the latest round. We dropped 386 relationships in which respondents did not report having sex with their partner, 37 that were missing information on contraceptive use at last sex or in which the reported methods fell outside the categories of interest (see below), and 137 in which respondents reported not using any method at last sex because they and their partner were trying to conceive. Our final sample consisted of 4,014 unique relationships contributed by 3,498 respondents; females contributed 2,116 relationships, and males 1,898.

Measures

•**Dependent variables.** A dichotomous measure indicated whether respondents had used any contraceptive method (excluding withdrawal and rhythm) the last time they had had intercourse with their dating partner. A four-category measure indicated whether they had used no method (including withdrawal or rhythm), a condom only, a hormonal method only (including an IUD) or dual methods (a condom and a hormonal method). Other methods, such as the female condom, the diaphragm and spermicides, were used at last sex in only 18 relationships and so were excluded.

•**Relationship characteristics.** Relationship duration was measured as the number of months from the start of the relationship to last sex. A categorical variable assessed whether the couple first had sex before the dating relationship began, during the first or second month of the relationship, or after the second month. These data were missing for 11% of relationships because of the respondent's inability to recall either the date of first sex or the date the relationship began. In these cases, the length of the presexual relationship was assigned using mean imputation, and a missing flag was included in all models.

Respondents answered two questions regarding intimacy: how close they feel to their dating partner and how

*Respondents who contributed a dating relationship were similar to those who did not except that the latter were more likely than the former to be male and less likely to be black. Individuals who were excluded from the sample because they were cohabiting or married were more likely than respondents to be female or Hispanic, and less likely to be black, to have lived with two parents (biological or adoptive) at baseline and to have parents with at least some college experience. They also had a slightly lower average age at first sex.

much their partner cares about them. Responses were rated on a scale of 0–10, and were categorized as low (0–6), medium (7–9) or high (10) in the descriptive and bivariate analyses. In addition, respondents estimated the likelihood that they would still be dating their partner in six months; a score of 0 indicated no chance, and 10 indicated 100% certainty. These three variables were moderately correlated ($r=0.47-0.67$), so responses were averaged to create a single 0–10 intimacy scale (Cronbach’s alpha, 0.76). To assess commitment, a dichotomous measure asked whether the couple had discussed marriage or cohabitation.

Respondents also rated the amount of conflict in their relationship on a scale of 0–10; responses were categorized as low (0–3) or medium or high (4–10) in the descriptive and bivariate analyses. Finally, partner-respondent asymmetries were examined using a three-item summative index, for which one point was given for each of the following: The partner was of a different race or ethnicity;

the partner was more than two years older or younger; and the partner had completed at least some college, but the respondent had not (or vice versa).

•**Individual and family controls.** Time-varying characteristics were drawn from the survey round in which the respondent reported last having sex with his or her partner. These were the respondent’s age at last sex, whether the respondent was neither employed nor enrolled in school, whether the partner met these criteria when the relationship began, whether the respondent had completed at least some college and the number of sex partners in the past year. Another question asked if females had given birth and if males had fathered a child prior to the date of last sex. We considered this an individual rather than a relationship characteristic, because although 14% of relationships in our sample were reported by a respondent with a prior birth, the current partner was the other parent in fewer than 3% of these cases.

TABLE 1. Selected characteristics of young adult dating relationships, and background characteristics of respondents, 1997 cohort of the National Longitudinal Survey of Youth

Characteristic	%†	Characteristic	%†
DEPENDENT VARIABLE		INDIVIDUAL/FAMILY	
Contraceptive use at last sex		Age at last sex with partner	
None	25.4	18–19	19.3
Condom only	25.8	20–21	36.5
Hormonal only	25.8	22–26	44.2
Dual methods	23.0		
RELATIONSHIP		Neither employed nor enrolled in school	
Duration (mos.)		Partner neither employed nor enrolled in school	
0–6	31.2		5.5
7–12	20.1	Ever attended college	
13–23	22.5		55.5
≥24	26.2	Was a parent prior to last sex	
Timing of first sex in the relationship			14.2
Before dating began	9.0	No. of partners in last year	
In first or second month	55.6	1	57.1
After second month	35.4	2	19.2
Closeness to partner‡		≥3	23.7
Low	8.6	Gender‡‡	
Medium	45.7	Male	47.2
High	45.7	Female	52.8
Partner’s caring about respondent‡		Race/ethnicity‡‡	
Low	5.1	White	70.0
Medium	35.3	Black	16.7
High	59.5	Hispanic	12.1
Likelihood of being together in six mos.		Other	1.2
0–40%	5.9	Foreign-born‡‡	
50%	17.0		5.1
60–90%	35.8	Lived with two biological/adoptive parents‡‡	
100%	41.2		56.6
Discussed marriage/cohabitation		Either parent ever attended college‡‡	
	72.6		60.8
Medium/high level of conflict§		Age at first sex‡‡	
	43.6	≤14	18.9
Partner asymmetry††		15–17	52.3
0	35.8	≥18	28.8
1	43.8		
2	18.1		
3	2.4		

†Unless otherwise noted, characteristics are time-varying, and percentages are based on the sample of 4,014 relationships. †On a scale of 0–10: low, 0–6; medium, 7–9; high, 10. §On a scale of 0–10: medium/high, 4–10. ††Based on a three-item summative index of partner differences in race or ethnicity, age and educational attainment. ‡‡Time-invariant; percentages are based on the sample of 3,498 respondents. Note: Percentages are weighted.

Time-invariant characteristics were measured at Round 1. These were gender, race or ethnicity, foreign-born status, whether the respondent had lived with two parents (biological or adoptive) at baseline, whether either parent had completed at least some college and age at first sex.

Analysis

First, we conducted descriptive analyses to examine contraceptive use patterns and relationship, individual and family characteristics. Percentages for time-varying characteristics are based on the sample of relationships; those for time-invariant characteristics are based on the sample of respondents. Second, we used chi-square tests to assess bivariate associations between relationship characteristics and each contraceptive use category.

Multivariate logistic and multinomial logistic regression models were then run to examine associations between relationship characteristics and contraceptive use, while controlling for individual and family background factors. Relationship characteristics were weakly to only moderately correlated; coefficients ranged from -0.13 (between the intimacy and conflict scales) to 0.39 (between presexual relationship length and overall relationship length). Thus, we included them in the model simultaneously. Fifteen percent of respondents contributed more than one relationship; therefore, to the extent that a young adult's contraceptive use in one relationship is associated with the same individual's use in another, the significance of parameter estimates may be overstated because of underestimated standard errors.³⁵ However, results from diagnostic random-effects models gave us confidence that the standard logistic and multinomial logistic regression models did not bias our findings.* Finally, we examined interactions between gender and relationship characteristics. All models were run using Stata 11, and they incorporated weights and controlled for the 1997 survey's household clustering.

RESULTS

Sample Characteristics

Overall, three-quarters of relationships involved respondents who had used a contraceptive method at last sexual intercourse (Table 1): 26% a condom only, 26% a hormonal method only and 23% dual methods. Thirty-one percent of relationships were six months or less in duration, while 26% were more than two years. In 9% of relationships, respondents reported that they had had sex before dating. Measures of intimacy skewed

TABLE 2. Percentage distribution of young adult dating relationships, by contraceptive method used at last sex within the relationship, according to selected relationship characteristics

Characteristic	None	Condom only	Hormonal only	Dual method	Total
Duration of relationship (mos.)					
0–6	27.2	30.7***	20.4***	21.7	100.0
7–12	26.0	23.5	29.8	20.7	100.0
≥13	23.9	23.4	28.4	24.3	100.0
Timing of first sex in the relationship					
Before dating began	24.7**	28.9*	24.2***	22.1***	100.0
In first or second month	27.6	24.0	29.4	18.9	100.0
After second month	22.4	28.0	21.8	27.9	100.0
Intimacy scale†					
Low	31.4***	31.3***	18.5***	18.8**	100.0
Medium	25.0	25.9	26.4	22.6	100.0
High	22.2	22.6	28.9	26.3	100.0
Discussed marriage/cohabitation					
Yes	26.4***	23.7***	28.0***	21.9**	100.0
No	22.4	31.8	19.8	26.0	100.0
Level of conflict‡					
Low	21.9***	26.1	27.2*	24.8*	100.0
Medium/high	29.5	26.0	23.9	20.6	100.0
Partner asymmetry§					
0	22.7**	25.7	26.0	25.7*	100.0
1	25.5	25.5	27.2	21.8	100.0
2	29.0	27.1	23.1	20.8	100.0
3	32.8	28.3	16.3	22.5	100.0

* $p < .05$. ** $p < .01$. *** $p < .001$. †Index combining closeness to partner, partner's caring about respondent and likelihood of being together in six months, on a scale of 0–10: low, 0–7; medium, 8–9; high, 10. ‡On a scale of 0–10: low, 0–3; medium/high, 4–10. §Based on a three-item summative index of partner differences in race or ethnicity, age and educational attainment. Note: Chi-square tests examined differences across all categories.

toward high values: Forty-six percent of relationships received the highest possible score for closeness, and 60% achieved the highest possible score for caring. In addition, in 41% of relationships, the respondent was certain that the couple would be together in six months; only 6% were rated as having less than a 50% chance of lasting another six months. Nearly three-quarters of relationships had included discussion of marriage or cohabitation.

In 44% of relationships, respondents reported experiencing medium or high levels of conflict. Thirty-six percent of relationships exhibited no asymmetries, 44% had one and 18% had two; in only 2% did the respondent report all three indicators of asymmetry.

Nineteen percent of relationships were reported by 18–19-year-olds, 37% by 20–21-year-olds and 44% by 22–26-year-olds. Respondents in 12% of relationships were neither employed nor enrolled in school; the corresponding figure for partners was 6%. In 56% of relationships, the respondent had completed at least some college, and in 14%, he or she had become a parent prior to last reported sex. Respondents in 57% of the relationships had had one partner in the past year, 19% reported two, and 24% reported three or more. In 53% of the sample's relationships, respondents were female. Seven in 10 respondents were white, 5% were foreign-born, 57% had lived with two parents at baseline and 61% had a parent

*Ideally, we would have conducted random-effects logistic regression models; however, the multinomial models did not converge properly, likely because few respondents contributed multiple current relationships. We ran logistic models comparing hormonal method use with other method or no method use, as well as condom use with other method or no method use, both with and without controls for multiple observations per respondent. Parameter estimates in models that used the *xtlogit* command in Stata produced similar levels of significance and slightly larger absolute estimates.

with at least some college education. About half of respondents were aged 15–17 when they first had sex.

Relationship Characteristics and Contraceptive Use

Every relationship characteristic was linked to contraceptive use in bivariate analyses (Table 2, page 123). In relationships that were seven months or longer in duration, 23–24% of respondents had used only a condom at last sex, whereas in relationships of six months or less, 31% had reported such use. In contrast, the corresponding figures for having used only a hormonal method were 28–30% and 20%, respectively. The timing of first sex in the relationship appeared to have a U-shaped association with contraceptive use. Those who had had sex prior to dating, as well as those who had waited at least two months before having sex, were more likely to have used any method than were those who had had sex in the first or second month; this was the case for condom only and dual method use, but the inverse held for use of a hormonal method only.

Compared with respondents in relationships with a low level of intimacy, those who scored medium or high on the intimacy scale were more likely to have used any method at last sex, particularly hormonal methods only (26–29%

vs. 19%); however, they were less likely to have used a condom only (23–26% vs. 31%). The reported level of relationship commitment was inversely associated with contraceptive use: Respondents in relationships in which marriage or cohabitation had been discussed were less likely than others to have used any method, particularly condoms, either alone (24% vs. 32%) or with a hormonal method (22% vs. 26%). Yet such respondents were more likely than others to have used a hormonal method only (28% vs. 20%). Compared with respondents in relationships characterized by little conflict, those reporting a medium or high level of conflict reported lower rates of any contraceptive use and of hormonal use, either alone (24% vs. 27%) or with a condom (21% vs. 25%). Finally, the greater the number of partner asymmetries, the greater the likelihood of no method use at last sex (e.g., 33% among those with three differences vs. 23% among those with none).

In the multivariate analysis, all relationship dimensions maintained associations with overall contraceptive use and method choice, net of family and individual controls (Table 3). Although relationship duration was not associated with overall contraceptive use, each additional month of duration was associated with a greater likelihood

TABLE 3. Odds ratios from logistic regression analysis assessing likelihood of any contraceptive use, and relative risk ratios from multinomial logistic regression analysis assessing likelihood of use of specific methods, by selected characteristics

Characteristic	Any method vs. none	Condom only vs. none	Hormonal only vs. none	Dual method vs. none	Hormonal only vs. condom only	Dual method vs. condom only	Dual method vs. hormonal only
Relationship							
Duration	1.00	0.99	1.01**	1.00	1.01***	1.01*	0.99*
Timing of first sex in the relationship							
Before dating began	1.35*	1.50*	1.09	1.52*	0.73	1.01	1.40
In first or second month (ref)	1.00	1.00	1.00	1.00	1.00	1.00	1.00
After second month	1.22*	1.44**	0.75*	1.63***	0.52***	1.13	2.17***
Intimacy scale	1.08**	1.01	1.15***	1.13***	1.14***	1.12***	0.98
Discussed marriage/cohabitation	0.69***	0.63***	1.00	0.56***	1.59***	0.89	0.56***
Level of conflict scale	0.97*	0.97*	0.98	0.96*	1.01	0.99	0.98
Partner asymmetry scale	0.90*	0.95	0.87*	0.87*	0.92	0.92	1.00
Individual/family							
Age at last sex with partner	0.95*	0.95	0.95	0.93**	1.00	0.97	0.97
Neither employed nor enrolled in school	0.73**	0.89	0.54***	0.72*	0.61**	0.81	1.34
Partner neither employed nor enrolled in school	0.64**	0.72	0.56**	0.61*	0.77	0.85	1.11
Ever attended college	1.59***	1.38**	2.09***	1.39**	1.52***	1.01	0.67***
Was a parent prior to last sex	0.53***	0.54***	0.53***	0.54***	0.98	1.00	1.02
No. of partners in last year	0.93***	0.92***	0.97	0.91***	1.05	0.99	0.95
Male	0.90	1.23*	0.73**	0.81*	0.60***	0.65***	1.10
Race/ethnicity							
White (ref)	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Black	0.80*	1.31*	0.38***	0.83	0.29***	0.63***	2.17***
Hispanic	0.83	1.19	0.70*	0.61**	0.59***	0.52***	0.87
Other	0.99	1.40	0.67	0.94	0.47	0.67	1.42
Foreign-born	1.12	1.27	0.98	1.05	0.77	0.82	1.07
Lived with two biological/adoptive parents	1.07	1.13	0.95	1.15	0.84	1.02	1.21
Either parent ever attended college	1.16	1.03	1.55***	1.01	1.51***	0.98	0.65***
Age at first sex	1.03	1.07**	0.98	1.04	0.92***	0.98	1.06**
<i>F</i>	12.92***	8.46***	8.46***	8.46***	8.46***	8.46***	8.46***
<i>df</i>	22	66	66	66	66	66	66

*p<.05. **p<.01. ***p<.001. Note: ref=reference category.

of having used a hormonal method at last sex as opposed to no method or a condom, or dual methods rather than a condom alone (relative risk ratio, 1.01 for each). By contrast, the relative risk of having used dual methods instead of a hormonal method alone was reduced with each additional month (0.99).

Respondents in relationships in which sex occurred before dating officially began, as well as those who waited for two or more months before having sex, had elevated odds of having used any form of contraception (odds ratios, 1.4 and 1.2, respectively); these differences were driven by an increased likelihood of condom or dual method use rather than use of no method (relative risk ratios, 1.4–1.6). Compared with respondents in relationships in which first sex occurred within two months, those in relationships in which the couple waited longer had an increased relative risk of having used dual methods rather than a hormonal method alone (2.2), and a reduced risk of having used a hormonal method only as opposed to either no method or a condom only (0.8 and 0.5, respectively).

Intimacy was associated with overall contraceptive use and method choice: With each additional point on the relationship intimacy scale, respondents had an elevated likelihood of having used any method at last sex (odds ratio, 1.1), or having used a hormonal method only or dual methods, rather than no method or a condom alone (relative risk ratios, 1.1–1.2). Respondents in relationships in which marriage or cohabitation had been discussed were less likely than others to have used any method (odds ratio, 0.7); this difference was driven mainly by their reduced risk of condom use versus no method (relative risk ratio, 0.6), and of dual method use as opposed to use of either a hormonal or no method (0.6 for each). However, these respondents had a higher relative risk than others of having used a hormonal method alone versus a condom alone (1.6). Additionally, level of conflict was inversely associated with the likelihood that any method had been used at last sex (odds ratio, 0.97), particularly condoms (either alone or with a hormonal method), rather than no method (relative risk ratios, 0.96–0.97). Finally, an increasing level of partner asymmetry was associated with reduced odds of any method use (0.9), and reduced risks of hormonal method use alone or dual method use, as opposed to no contraceptive use (relative risk ratio, 0.9 for each).

The associations between control variables and contraceptive use were, for the most part, in the expected direction. Generally, age at last sex, being unemployed and not enrolled in school (for respondent and partner), number of sex partners, being a parent, and belonging to a racial or ethnic minority group were negatively associated with contraceptive use. College attendance (for respondent and parents) and age at first sex were positively associated with method use.

Analyses of interactions between gender and relationship characteristics yielded nonsignificant findings and did not improve the fit of our models, indicating that

the associations between relationship characteristics and contraceptive use at last sex were similar for males and females (not shown).

DISCUSSION

This study expands previous research on characteristics associated with contraceptive use by focusing on young adults, examining a variety of methods and incorporating multiple dimensions of relationship context. Every measure of relationship context in our analysis was associated with at least one contraceptive use outcome, and we found some support for each of our frameworks linking relationship context and method use.

Relationship Duration

As hypothesized under the sawtooth and communication models, relationship duration was positively associated with use of a hormonal method (rather than no method, a condom or dual methods); however, it was not associated with the likelihood of using contraceptives overall or of using condoms. In other words, overall contraceptive use does not decline in longer relationships, but reliance on hormonal methods increases, suggesting a greater focus on pregnancy than on STD prevention.

In support of the sawtooth and communication models, we found a U-shaped association between the length of the presexual relationship and contraceptive use, particularly use of condoms and dual methods. The elevated use in relationships in which sex occurred before dating began supports the hypothesis that young adults engage in more protective behaviors against STDs and pregnancy in more casual relationships.¹¹ Meanwhile, the elevated use, particularly of condoms alone or with a hormonal method, when sex was delayed for at least two months may reflect greater communication and planning regarding contraception.³³ One unexpected finding was that those who waited more than two months had lower odds of using hormonal methods (as opposed to no method or condoms) than those who had sex within a month or two of starting to date. This may reflect the greater likelihood of delaying sex in first as compared with later sexual relationships,³⁶ since early relationships often occur before females have begun using hormonal methods.²⁸

Intimacy and Commitment

Greater relationship intimacy was associated with increased odds of using any method at last sex, particularly hormonal methods or dual methods, supporting the communication model of contraceptive use. In support of the sawtooth hypothesis, however, young adults in more committed relationships (i.e., those who had discussed marriage or cohabitation) had reduced odds of using any method, especially condoms and dual methods. This finding supports findings from qualitative research indicating that young adults are willing to occasionally forgo method use with a more committed partner.²⁰ In fact, some research suggests that discussions about marriage and

cohabitation are often accompanied by discussions about childbearing, which may reduce contraceptive use.³⁷ The lower use of condoms and dual methods in more committed relationships may reflect a lower perceived risk of STDs in these relationships. Alternatively, because a high proportion of our dating sample had discussed marriage or cohabitation, the absence of these discussions may be an indicator of a more casual relationship and thus may be linked to greater contraceptive use, particularly condom use. Both measures of intimacy and commitment were associated with greater use of hormonal methods rather than condoms, which supports our expectation of greater reliance on such methods in more serious relationships.

Partner Conflict and Asymmetries

Levels of perceived conflict were fairly low in these dating relationships; however, the greater the level of conflict, the lower the likelihood of overall contraceptive use and, particularly, use of condoms and dual methods. This extends research by Manning and colleagues, which found that negative relationship characteristics (including conflict) were linked to reduced condom use among teenage females,⁷ and research suggesting that power differentials and poor communication in relationships with relatively high levels of conflict may place young adults at risk of both unintended pregnancy and STDs.³⁸

Two-thirds of relationships involved some type of partner asymmetry. As hypothesized under a communication model, we found that increases in the number of asymmetries were associated with reductions in contraceptive use, particularly use of hormonal and dual methods. These findings support previous research (primarily among adolescents) suggesting that reduced communication and trust, or even power differentials, exist in relationships between partners of different races or ethnicities,^{10,15} educational levels²³ or ages.^{10,15,22}

Overall, both positive relationship characteristics (delayed sex within a relationship, greater intimacy, lower conflict) and negative ones (sex prior to dating, not discussing commitment) were associated with increased contraceptive use and with use of specific methods. These findings support various theoretical approaches and also reinforce the Manning et al.⁷ finding of reduced condom use among teenagers who report both positive and negative relationship characteristics.

Limitations

This study has a number of limitations. First, our sample excluded young adults who were not in a current relationship and those in any casual relationships that they did not define as dating, so our findings cannot be generalized to all dating relationships. Second, ideally we would have measured the consistency of contraceptive use within relationships; however, the NLSY data for the 1997 cohort include measures of use only at first and last sex for dating relationships. Third, while the data provided a richer

look at relationships than has been possible previously, our research is constrained by the available relationship context measures. The measure of partner conflict lacks nuance and a clear definition, and reported levels of intimacy and commitment were very high; future relationship-level research could benefit from more refined measures that capture more variation in intimacy. Also, these data do not include measures of communication between partners, a factor that has been linked to contraceptive use.⁸ Finally, our measure of the educational difference between partners and respondents may not capture differences in longer term relationships, as the partner's education level was assessed at the beginning of the relationship, rather than in the round closest to last sex.

Implications

Many programs that are designed to reduce high rates of unintended pregnancy and STDs take an individual, knowledge-based approach that highlights the risks associated with unprotected sex.³⁹ A number of researchers have called for a broader approach to reducing unintended childbearing and STDs by incorporating tailored interventions and focusing on psychological correlates of risk.^{40–42} However, our study points to the importance of the relationship context in contraceptive decision making, and adds to a growing knowledge base about the role of the relationship dyad.^{8,15,39} Our results suggest that programs should also focus on the dating relationships of adolescents and young adults, and potentially provide models of healthy relationships. Such an approach is consistent with an analysis of rigorously evaluated teenage pregnancy prevention programs, which found that providing teenagers with opportunities to practice communication and negotiation skills can improve contraceptive use.⁴¹

Our findings also suggest that it may be helpful for programs to have teenagers and young adults role-play the negotiating of contraceptive use with multiple types of partners, such as one whom a teenager does not know well, an older partner, a partner of a different race or ethnicity, or a partner in a high-conflict relationship. An extension of this approach would combine relationship education approaches with sex education curricula to help teenagers and young adults improve their relationship-level communication skills and recognize how the relationship context may influence decisions about having sex and using contraceptives.³⁹ These program approaches should begin in the teenage years to establish a foundation for healthy relationship skills. However, very few evaluated pregnancy prevention programs or approaches extend beyond the high school years.⁴³ Thus, prevention efforts should also be targeted to young adults, including those enrolled in postsecondary school.

While a substantial proportion of our sample reported using hormonal methods, many respondents relied on condoms, and one-quarter used no contraceptives at last sex. Our findings suggest that some young adults may be willing to occasionally skip using a method when they

are in a committed relationship, and so prevention efforts should address the potential implications of a mistimed or unwanted pregnancy for educational, career and union formation trajectories among young adults.

In addition, our findings indicate that few couples maintain condom use as relationships become more committed, and other research suggests that many fail to transition to more effective, hormonal methods.²⁰ Because it is important to engage both men and women in the transition to hormonal methods,²⁰ program and clinic efforts should help dispel couple-level misperceptions about the prevalence and severity of side effects associated with these methods and the potential underestimation of methods' effectiveness.⁴⁴ However, men are much less likely than women to access reproductive health services,^{45,46} highlighting the challenges of couple-level reproductive health education.

While our study focused on various relationship dimensions individually, future research should examine how relationship factors cluster and how combinations of such factors are linked to contraceptive use. Expanding our knowledge of this topic would enhance the development of prevention strategies that incorporate relationship-based approaches into sexual and contraceptive use decision making among young adults, and ultimately, could help reduce high rates of unintended pregnancy and STDs among this population in the United States.

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