Research Article

The Language of Love?—Verbal versus Implied Consent at First Heterosexual Intercourse: Implications for Contraceptive Use

Jenny A. Higgins, James Trussell, Nelwyn B. Moore, and J. Kenneth Davidson, Sr.

ABSTRACT

Background: *Little is known about how young people communicate about initiating intercourse.* ***Purpose:*** *This study was designed to gauge the prevalence of implied versus verbal consent at first intercourse in a U.S. college population, assess effects of consent type on contraceptive use, and explore the influences of gender, race and other factors.* ***Methods:*** *We conducted and analyzed a cross-sectional survey of non-Hispanic white and black students from four universities, exploring associations between verbal and nonverbal consent, contraceptive use and covariates.* ***Results:*** *Among those with consensual first intercourse experiences (N=1883), half (49%) provided nonverbal consent. Black men were the most likely to provide nonverbal consent (61%), followed by white men (55%), black women (51%), and white women (43%). Respondents who used condoms at first intercourse were more likely to provide verbal consent, suggesting that condoms may prompt sexual discussions (or vice versa). In contrast, even when controlling for covariates, those who provided nonverbal consent were less likely to have used contraception (significantly so for women).* ***Discussion:*** *These findings confirm the hypothesis that young people who do not discuss whether to engage in vaginal intercourse for the first time are less likely to use contraception. These results add an important layer to our current conceptual model of sexual development, in particular, how young people adopt, or fail to adopt, behaviors that will keep them healthy once they decide to become sexually active.* ***Translation to Health Education Practice:*** *Enhanced sexual communication skills are greatly needed. Public health practitioners should investigate type of consent in future research and programming, with sensitivity to gender and racial influences.*

Higgins J, Trussell J, Moore NB, Davidson JK Sr. The language of love?—Verbal vs. implied consent at first heterosexual intercourse: Implications for contraceptive use Am J Health Educ. *2010;41(4):218-230. This paper was submitted to the* Journal *on August 19, 2009, revised and accepted for publication on December 14, 2009.*

BACKGROUND

The public health and medical fields have devoted considerable attention to the timing, context and sequelae of adolescents' sexual initiation,[1-4] which we define here as vaginal intercourse. Although research shows that a number of other sexual behaviors are increasingly associated with virginity loss, especially among same-sex couples,[5-7] the current paper refers to

Jenny A. Higgins is an assistant professor in the Heilbrunn Department of Population & Family Health, Columbia University School of Public Health, B3, Room 309, Columbia University, New York, NY 10032; E-mail: jh2527@columbia.edu. James Trussell is a professor and director of the Office of Population Research, Princeton University, Princeton, NJ 08544 and a visiting professor at The Hull York Medical School, University of Hull (England). Nelwyn B. Moore is a professor Emerita, Family and Child Studies Texas State University at San Marcos, San Marcos, TX 78666. J. Kenneth Davidson, Sr. is a professor Emeritus of Sociology, University of Wisconsin at Eau Claire, Round Rock, TX 78665.

virginity loss as vaginal intercourse. The experience of first vaginal intercourse is imbued with enormous personal and cultural significance,[5] as well as important connections to future health behaviors such as contraceptive use[8] and protection against STIs.[9] First vaginal intercourse has also been understood as an important touchstone of adolescent development, one in which young people learn to engage in romantic and/or sexual relationships.[10]

Given the intensity of the scientific and political spotlight on first sexual intercourse, it is surprising that we know so little about how young people talk—or fail to talk—about how and when to engage in intercourse for the first time. With a few qualitative exceptions from the UK[11] and Australia,[12] minimal research has explored whether young people discuss intercourse beforehand, or rather if intercourse unfolds in a wordless, albeit consensual, fashion - a natural step in the progression of other sexual events.[13] Moreover, although not demonstrated empirically, young people who do not or cannot speak directly about whether to engage in intercourse for the first time may be unlikely to discuss, let alone use, contraception, and such silences may set patterns for future sexual relationships. Thus, examining the prevalence and type of communication about first intercourse may highlight an important point of intervention in young adults' sexual health.

Researchers have explored the degree to which adolescents discuss *contraception or STIs* before having vaginal intercourse for the first time. Evidence suggests that those who talk about pregnancy and STI prevention methods beforehand are more likely to use protective methods, both at first and subsequent sexual intercourse episodes.[8,13,14] Nationally, representative data from the National Longitudinal Study of Adolescent Health indicate that 53% of young women and 45% of young men report having discussed contraception or STIs before having first intercourse.[13] But we still know little about the timing, content, or context of these conversations. For example, do they occur in the weeks, days, or mere moments before intercourse? Or to what degree does intercourse "just happen" versus result from premeditation or preparation? Furthermore, despite significant overlap, discussions about contraception do not automatically equal discussions about whether to have intercourse at all.

The Potential Influence of Gender and Race on Consent Patterns. As Karen Pliskin has written, "For many people in the United States, it is easier to have sex than talk about it" (p 89).[15] For young people, sexual communication challenges may be particularly severe.[12, 16-18] Scholarship from the UK has shown how sexual ambiguity, while undermining conversations about contraception,[19] can actually be adaptive for young people, for example, in protecting oneself or one's partner from rejection or from making false assumptions.[16] Youth can perceive direct communication about sex to be too formal, too presumptuous, or especially for young women,[20, 21] too forward.[16, 19]

Gender is likely to strongly influence communication, or lack thereof, during first sexual intercourse.[21] A sexual double-standard that expects or even promotes young men's active heterosexuality but stigmatizes "promiscuity" in young women may render young women especially unlikely or unwilling to discuss intercourse.[5, 7, 22] Fear of appearing too sexual could lead many young women to say that intercourse "just happened" instead of discussing or planning for it and/or preparing to use contraception.[7] Conversely, gendered sexual scripts of women as sexual gatekeepers and men as boundary-pushers or aggressors, even when this role is unwanted,[23] may mean that women are the ones to provide the verbal green light for first intercourse, while men remain silent assenters - or aggressors.[24] Moreover, although a "boys will be boys" approach in our culture has given young men more sexual autonomy than young women, it also may have given young men the short shift in school or family-based sexuality education, affording them few tools such as sexual communication skills.[20]

Race and ethnicity have also been shown to influence sexual debut, including its timing,[25, 26] the progression of sexual activities leading to coitus[10, 26] and other sexual behaviors, such as multiple partnerships.[27, 28] Although, as O'Sullivan and her colleagues[10(p. 101)] have pointed out, "the extent to which [sexual] relationship development varies on the basis of race and ethnicity is still unclear." Regarding young people's communication about safer sex practices, at least two studies have shown that blacks have higher odds than whites of having discussed contraception or STIs with their first sexual intercourse partners.[10, 13] Compared to gender, however, we know far less about the processes through which race shapes sexual relationships, communication, or consent. To our knowledge, no data exists that compares whites and blacks on type of consent provided at first intercourse; these differences could possibly shed light on racial differences in contraceptive use.

Other possible influences hypothesized to influence type of consent (but not always empirically proven) include the following variables: (1) *age* at first intercourse, with younger individuals less likely to have fully-developed sexual self-efficacy, and thus less likely to provide verbal consent; (2) *partner's age* and/or the *age gap* between partners; with larger age gaps associated with greater likelihood of intercourse occurring at all in young people's relationships[29] and lower rates of contraceptive use when intercourse does occur,[30] and which possibly undermines verbal consent; (3) *type of relationship with one's first intercourse partner,* with longer term, more intimate, familiar relationships associated with greater likelihood of verbal consent; (4) *levels of guilt and anxiety at first intercourse* which are potentially inversely associated with sexual comfort and verbal consent;[31] (5) *under the influence of alcohol or drugs* at the time of first intercourse, a phenomenon commonly linked to sex among teenagers and young adults,[32] which is likely to subvert verbal consent; and (6) *religiosity*, with stronger religiosity associated with deeper guilt about sex, as well as less sexual knowledge, both of which could undermine verbal consent.[33]

PURPOSE

The literature reviewed above provides a theoretical basis for some of the ways in which gender, race and other factors may influence communication about first heterosexual intercourse. However, the ultimate goal of this study is not to exhaustively document the multiple socio-cultural nuances of sexual communication among young people. Rather, the study aims to gauge the prevalence of implied versus verbal consent at first intercourse among a U.S. college population, to assess effects of type of consent on contraceptive use, and to explore ways in which gender, race and other covariates may influence both.

METHODS

Procedures

An anonymous 127-item questionnaire about sexual behavior and attitudes was administered to students at four different universities—public universities in Texas and Wisconsin, a historically Black university in North Carolina, and a religiously-affiliated private university in North Carolina. Human subject protocols for the study were reviewed and approved by the Institutional Review Boards of all four universities.

In the data collection process, the principal investigators at Wisconsin and Texas obtained cooperation from numerous professors at each of the four universities. In order to obtain representative samples from each university, classes were chosen to reflect a broad range of academic majors and a similar distribution of freshmen, sophomores, juniors and seniors. A total of 57 faculty members were approached, and 53 permitted investigators to use their classes (four said "no" due to pending class work during the week they were approached). The survey was administered in lower- and upper-division classes in general education, social sciences, business and family studies. The classes were not selected to maximize gender distribution; at all four universities, more female than male students were enrolled, and, in some courses (e.g., family studies and psychology), significantly more women than men typically enrolled. Acquaintanceship with the professors by the primary investigators was not a criterion for the selection of their classes.

During the class period devoted to the survey, using a script, the primary investigators explained the survey procedures for the study, assuring potential respondents that their participation was voluntary and anonymous. They were then given a cover letter, certifying IRB approval, and a copy of the questionnaire. Students were instructed that if they did not wish to participate, they were to return the questionnaire uncompleted. After completion of the questionnaire, which took approximately 45 minutes, it was deposited by the student into a ballot box at the front of the room before exiting. A research assistant monitored the return of the questionnaires. Response rates were in excess of 90%. No incentives of any kind were offered for participation.

The survey questions were drawn from an item pool that had been developed during extensive pretesting and previous surveys administered by the primary investigators over several decades of sexuality research. The questions are not part of a scale, but rather are stand alone items, many of which have appeared elsewhere.[31, 34, 35] One exception is the question about type of consent at first vaginal intercourse, which was developed especially for this study. A questionnaire containing the consent item was pretested on two previous occasions, establishing face validity for the item. Because this item was not part of a scale, tests for reliability were not conducted. The topic was borne out of sexuality courses taught by one of the investigators; in-class discussions regarding how fondling, fingering and other sexual activities can lead to intercourse led the investigators to the conceptualization of implied versus verbal consent.[31]

Sample and Participants

Altogether, 3,186 students were surveyed, including 2,030 women and 1,155 men. The sex ratio was a function of the classes in which the survey was conducted, which have a disproportionate number of female students. Our research question in this paper pertains to consensual sex at first vaginal intercourse. Thus, only students who had engaged in vaginal intercourse at least once were included in the analyses (N=2,420, or 76% of the total sample). Respondents older than age 25 (N=257) were excluded, as were graduate students (N=9) and those who gave no response (N=2) or who responded "not applicable" (N=16) to the question on class standing. Given our interest in premarital sexual activity, the sample was limited to never-married respondents (which excluded 173 married, divorced, separated, or widowed students). Students who identified as lesbian, bisexual, or gay (N=65) were also excluded, since the focus was on those primarily engaged in heterosexual behaviors, which would affect their exposure to unintended pregnancy and contraceptive use. Finally, we excluded those respondents who reported that their first intercourse experience was non-consensual (N=79) or who did not remember (N=51).

Compared to non-Hispanic whites (N=2,271) and blacks (N=650), the sample contained exceedingly small numbers of Hispanic (N=165), Asian (N=54), American Indian (N=13), or multiracial (N=15) students to conduct separate analyses by gender and race/ethnicity. The sample was thus restricted to non-Hispanic whites and blacks. Fortunately, a sufficient number of black respondents allowed for separate analyses by race, which was important given the significance of race interactions in the models. These exclusion and inclusion criteria resulted in a final sample of 1,883 students (59% of the original sample), with 254 black women, 910 white women, 205 black men, and 514 white men.

Measures

Type of Consent. Respondents were asked if they voluntarily consented to their first sexual intercourse experience, or if they had intercourse against their will. Responses included *yes, implied consent; yes, verbal consent; no, against my will;* and *do not remember.*

Contraceptive method at first sexual in-

tercourse. Respondents were asked if they or their sex partner used a contraceptive method during their first episode of sexual intercourse, and those who said "yes" were asked to choose which method(s) from a list. For the purposes of this analysis, we created a three-category contraceptive variable: (1) any condom use, which included respondents who used a condom alone or in conjunction with another method (e.g., oral contraceptives); (2) use of any method other than condoms; and (3) no method. We created an "any condom use" category because we hypothesized that condom use could create a proxy for consent in many sexual scenarios.

Statistical Analyses

Because our sample contained sufficiently large sub-samples to separately explore individual patterns within the four race-gender groups (black women, white women, black men, white men), we ran all analyses separately by these four groups unless otherwise indicated. Our decision to do so was influenced by the strong and persistent effect of gender and race on sexual attitudes and practices, as well as the significant outcomes of our tests for race and gender interactions in the primary set of multivariate regressions, which warranted separate regressions for each race-gender group. Conducting four separate regressions allowed for explorations of the unique findings for each of these groups, rather than white respondents' patterns overpowering those for black respondents, or women's findings overpowering those for men, given the larger sample sizes of both former groups.

In descriptive analyses, we conducted Chi-square tests and *t*-tests as appropriate by race, gender, and the covariates (Table 1). In other words, we explored whether the four race and gender subgroups displayed significantly different means or proportions of the descriptive variables. In univariate analyses, we compared verbal and nonverbal consent with respect to covariates by running individual logistic regressions between each of the covariates and the consent variable (Table 2). Doing the latter not only provided univariate odds ratios, but it also indicated which factors should potentially be included in multivariate models. Retaining all 15 covariates for the multivariate models was not an option due to small subsamples (e.g., 205 black men), plus we wanted to capture only those factors strongly associated with consent. Thus, those variables with a univariate odds ratio *P* value of 0.20 or less were retained for purposes of building multivariate models with the consent variable as an outcome; those with a *P* value of greater than 0.20 were dropped from multivariate analyses. We used a conservative cutoff of 0.20 versus 0.05 in order to eliminate the risk of dropping variables from the multivariate models that were borderline significant in univariate analyses but could become statistically significant when other variables were taken into account.

In building multivariate models with non-verbal consent as the outcome (Table 3), we began with those variables that had been significant in univariate analysis at a level of $P<0.20$, then proceeded to drop those covariates that were not significantly associated with consent at the $P<0.10$ level. We used this more liberal definition of significance to account for the smaller denominators used in testing models for black women ($N=254$) and black men ($N=205$). Likelihood ratio tests were used to gauge the overall significance of variables for which at least one category was significantly associated at the $P<0.10$ level. For example, if only one of the individual religious denominations (e.g., Catholicism) was associated with type of consent at the $P<0.01$ level, then we ran a likelihood ratio test for the religion variable at large.

In the final stage of our analyses, we used multivariate logistic regression to assess whether, in controlling for covariates, type of consent could help predict lack of contraceptive use at first sexual intercourse (Table 4). In these analyses, interaction tests indicated that gender—but not race—significantly mediated the relationship between consent and contraceptive use. Thus, we ran two regressions only; one for women and one for men.

RESULTS

Description of Participants

The mean age of respondents was 20.2 years, with a standard deviation of 1.6. Table 1 contains the means and percent distributions of the covariates, both for the total sample and for each race-gender group, with Chi-square tests and *t*-tests assessing differences as appropriate by race and gender. Overall, one in two respondents provided implied, nonverbal consent versus verbal consent at first intercourse (49%) (Table 1). Black men were the most likely to have provided nonverbal consent at first sexual intercourse (61%), followed by white men (55%), black women (51%), and white women (43%).

One-in-four respondents (25%) reported that neither they nor their partner used a method of contraception at first sexual intercourse. Black men were most likely to have reported that no method was used (41%), followed by white men (30%), black women (27%), and white women (19%). Among those who did use contraception, condoms were the most preferred method; only 4% of respondents reported use of a contraceptive method other than condoms at first intercourse.

Univariate Results

Table 2 displays the results of univariate logistic regressions that tested the strength of the association between nonverbal consent and the covariates. All figures presented in the following text are statistically significant at the $P<0.05$ level unless otherwise noted. Those characteristics significantly associated with nonverbal consent at first sexual intercourse differed by race and gender, although there were a few areas of overlap. Type of contraceptive use was the only covariate significantly associated with nonverbal consent among all four groups. Moreover, in three of the four groups, those respondents who used no method of contraception at first sexual intercourse were significantly more likely to have provided nonverbal, implied consent compared to those who used condoms (OR for black women=2.7, white women=1.9, white men=1.9). This relationship was not

Table 1. Descriptive Statistics by Gender and Race, College Students Aged 18-25 (*N* = 1883)

	Total Sample	Black Women (*N* = 254)	Non-Hispanic White Women (*N* = 910)	Black Men (*N* = 205)	Non-Hispanic White Men (*N* = 514)
AGE CHARACTERISTICS	Mean	Mean	Mean	Mean	Mean
Age at first sexual intercourse (SI)	16.6	16.0¥£	16.9£	14.9¥£	17.0£
Partner's age at first sexual intercourse	17.7	17.9¥£	18.4¥£	15.8¥£	17.1¥£
Age difference between partners, in years	1.1	1.9¥£	1.4¥£	.84¥£	.13¥£
Age first received info on contraception	12.7	13.1	12.8	12.1	12.4
	%	%	%	%	%
TYPE OF CONSENT AT FIRST SEXUAL INTERCOURSE		¥£	¥£	¥	¥
Verbal consent	50.8	48.8	57.0	39.5	45.3
Non-verbal, implied consent	49.2	51.2	43.0	60.5	54.7
CONTRACEPTIVE USE AT FIRST SEXUAL INTERCOURSE		¥£	¥£	¥£	¥£
Any condom use	70.8	72.7	77.1	57.7	64.0
Any method other than condoms	4.1	0.4	4.3	1.5	6.5
No contraceptive used	25.1	26.9	18.6	40.8	29.5
EMOTIONS AND SUBSTANCE USE AT FIRST SEXUAL INTERCOURSE					
Anxiety at first sexual intercourse		£	£	£	£
Slight/not at all	36.7	33.6	34.1	48.8	38.2
Moderate	23.0	27.3	23.9	17.7	21.2
Extreme/considerable	40.3	31.9	42.0	33.5	40.5
Guilt at first sexual intercourse		¥£	¥£	¥£	¥£
Slight/not at all	68.2	54.7	63.9	81.0	77.4
Moderate	13.3	14.6	14.9	9.3	11.5
Extreme/considerable	18.5	30.7	21.1	9.8	11.1
Under the influence of alcohol or drugs	15.9	4.7£	17.0¥£	6.8£	23.2¥£
RELATIONSHIP WITH FIRST SEXUAL PARTNER					
Type of relationship with 1st SI partner		¥£	¥£	¥£	¥£
Casual acquaintance	5.5	4.5	2.9	11.3	8.4
Friend	11.1	9.9	4.8	42.5	11.5
Occasional dating	9.2	10.3	7.0	11.8	11.7
Steady dating	38.3	39.1	39.2	23.7	41.7
Committed love relationship	35.9	36.2	46.1	10.8	26.8
SEX EDUCATION (sex ed)					
Never had a class with sexuality content	2.7	5.2	2.4	4.9	1.2
Perceived adequacy of sex ed from parents		¥	¥	¥	¥
Adequate	56.5	63.5	57.1	54.4	52.7
Neither/Moderate	12.9	8.8	12.1	14.2	15.8
Inadequate	30.7	27.7	19.7	31.4	31.6

Continued

¥ Significant ($P<0.05$) gender differences within race (e.g., black women versus black men)
£ Significant ($P<0.05$) racial differences within gender (e.g., black women versus non-Hispanic white women)

Table 1. Descriptive Statistics by Gender and Race, College Students Aged 18-25 (*N* = 1883) (Con't)

	Total Sample	Black Women (*N* = 254)	Non-Hispanic White Women (*N* = 910)	Black Men (*N* = 205)	Non-Hispanic White Men (*N* = 514)
	%	%	%	%	%
Perceived adequacy of sex ed in school (pre-college)		¥	¥	¥	¥
Adequate	71.1	73.2	73.7	66.3	67.3
Neither/Moderate	8.8	7.4	7.3	11.6	11.0
Inadequate	20.2	19.5	19.0	22.1	21.8
RELIGION					
Religious denomination		£	£	£	£
None	8.1	5.9	7.9	13.0	7.8
Mainline Protestant	32.7	11.9	39.6	11.4	38.1
Baptist	18.9	53.8	10.0	44.3	8.8
Catholic	28.6	4.2	35.6	7.6	35.3
Institutional Sect	2.2	7.6	0.8	4.9	1.2
Fundamentalist	8.4	16.1	5.0	16.8	7.6
Non-Christian	1.2	0.4	1.1	2.2	1.2
Level of religiousness compared to others		¥£	¥£	¥£	¥£
Less religious	38.2	16.6	40.2	31.0	47.5
About as religious	50.6	70.5	49.1	56.3	41.5
More religious	11.3	12.9	10.7	12.7	11.0
Current level of religious commitment		¥£	¥£	¥£	¥£
Not devout	31.4	15.5	32.9	24.9	38.7
Moderately devout	57.3	64.5	57.3	62.4	51.7
Devout	11.4	20.0	9.8	12.7	9.6

¥ Significant ($P<0.05$) gender differences within race (e.g., black women versus black men)
£ Significant ($P<0.05$) racial differences within gender (e.g., black women versus non-Hispanic white women)

statistically significant among black men.

Multivariate Results

Predictors of Nonverbal Consent. Regarding multivariate models with consent as the outcome, significant race-gender interactions warranted separate regressions for each race-gender group. In the final four regressions, covariates were retained only if at least one category within the variable was associated with consent at the $P<0.10$ level (e.g., if Catholicism was significantly associated with consent, the religion variable at large remained in the model even if other denomination categories were not significantly associated with consent). As with the univariate results, few variables were consistently associated with nonverbal consent across the four gender-race groups. For three of the groups (black women, white women, and black men), respondents who used no contraceptive method at first intercourse were approximately two times as likely as people who used condoms to provide nonverbal (versus verbal) consent (OR for black women, white women=2.0, black men=1.9). That relationship was not significant for white men, although men who used a method other than condoms were significantly less likely to have given nonverbal consent (OR=0.6).

Sexuality education variables were important in predicting nonverbal consent among White respondents in several ways. For both white women and men, older age when one learned about contraception was associated with greater odds of nonverbal

consent at first sexual intercourse. White women who had never had a sexuality education class in school were 2.8 times as likely to have given nonverbal consent as women with at least some sexuality education history. Moreover, white men who classified their sexuality education from their parents as "inadequate" were 1.7 times as likely to have provided nonverbal consent as did those who classified it as "adequate."

Level of religiousness and devotion also significantly predicted nonverbal consent in all groups except black women. Among both white women and black men, compared to those who said they were "less religious," those who identified as "more religious" were significantly more likely to give nonverbal consent (OR for white women=1.8, black men=3.2). Among white men, those who identified as religiously "devout" were 2.3 times as likely to provide nonverbal consent as those who reported they were "not devout."

Nonverbal Consent as a Predictor of Non-contraceptive Use at First Intercourse. We explored whether, in holding all the covariates constant, nonverbal consent could help predict lack of contraceptive use at first sexual intercourse. Unlike in the previous multivariate analyses, we left all covariates in the model, regardless of their significance. Furthermore, in these analyses, interaction tests indicated that gender—but not race—significantly mediated the relationship between consent and contraceptive use. Thus, we ran two regressions only: one for women and one for men.

Results indicate that implied, nonverbal consent does help predict lack of contraceptive use at first sexual intercourse in multivariate models, but only significantly so for women. Women who provided nonverbal consent were 2.3 times as likely as women who provided verbal consent to report that neither they nor their partner used a contraceptive method. The relationship was in the expected direction for men (OR=1.3), but was not statistically significant.

Moreover, in the multivariate model for women, type of consent was one of only three statistically significant predictors of no contraceptive use at first intercourse, in addition to age at first intercourse (OR = 0.8) and partner's age at first intercourse (OR = 1.1). Among men, the only significant predictors of no contraceptive use at first sexual intercourse were age at first intercourse (OR = 0.8), age at which one first learned about contraception (OR = 1.1), and considerable or extreme guilt (versus no or slight guilt) at first sexual intercourse (OR = 2.9).

DISCUSSION

In this study of U.S. college students, a striking one-in-two respondents reported providing implied versus verbal consent for first sexual intercourse. In multivariate analyses, nonverbal consent was a significant predictor of lack of contraceptive use at first intercourse for women, but not for men.

Few factors consistently predicted nonverbal consent among the four subgroups in our analysis (black women, white women, black men, white men), suggesting the need for continued sensitivity to the influence of gender and race on sexual initiation and development. However, perhaps more of interest are the areas of overlap between the four groups. For example, a number of variables hypothesized to influence type of consent were *not* significantly associated for most or all groups (e.g., relationship status, age or partner's age at first intercourse, or level of guilt at first intercourse). Further, contraceptive use was one of the few variables consistently associated with consent across race and gender. For all groups except white men, those who used no method of contraception at first intercourse were significantly more likely to have provided implied versus verbal consent.

Taken together, these findings confirm the hypothesis that young people who do not discuss whether to engage in vaginal intercourse for the first time are less likely to use contraception. These intuitive results are hardly surprising, but they nonetheless add an important layer to our current conceptual model of sexual development, in particular, how young people adopt, or fail to adopt, behaviors that will keep them healthy once they decide to become sexually active. At the very least, future studies of adolescent sexual behavior should assess for type of consent. Our results also highlight an important point of intervention in young adults' sexual health. The ability to clearly communicate one's wishes for or against certain sexual activities can help young people voice their needs and wants, as well as meet their goals concerning the avoidance of pregnancy and disease prevention.

Of course, sexual intents or wishes are not always clearly defined phenomena, especially among young people just learning how to engage in sexual and romantic relationships. In a culture with many mixed messages about young people's sexuality, such desires are often ambiguous,[16] and poor communication skills can only further obfuscate them. In some ways, equivocally conveying desires to a partner requires particularly fine-tuned sexual communication skills in which few young people have been trained or rehearsed. One recent analysis found that a significant minority of young women and men had engaged repeatedly in sexual activities that they disliked (e.g., oral sex, anal intercourse), even though these activities were presumably consensual.[36] Other scholarship has documented the blurry line between wantedness and unwantedness when it comes to consensual sex, for young women in particular.[37, 38] In other words, neither verbal nor nonverbal consent automatically equates to wantedness, or *vice versa*. Young women may feel pressure to engage in sexual intercourse to affirm a relationship or please one's partner,[22, 39] or feel ambivalent about their sexual desires given the socio-cultural stigmatization of young women's sexuality.[7] Thus, although verbal consent provides a better indication of intent than implied consent, it is hardly an unmistakable indicator of one's own desires, nor is it a direct path to sexually protective behaviors such as contraceptive use.

Limitations

Along those lines, results from this analysis should be interpreted with awareness of the study's limitations. Our assessment of "consent" is based on data from a close-ended, categorical question. We know

Table 2. Univariate Analyses: Descriptive Characteristics by Non-Verbal Consent, by Gender and Race College Students Aged 18-25 (N = 1883)

	Black Women (*N* = 254)		Non-Hispanic White Women (*N* = 910)		Black Men (*N* = 205)		Non-Hispanic White Men (*N* = 514)	
	Exp(β) Odds Ratio		Exp(β) Odds Ratio		Exp(β) Odds Ratio		Exp(β) Odds Ratio	
AGE CHARACTERISTICS								
Age at first sexual intercourse (SI)	1.0		1.1	***	1.0		1.1	
Partner's age at first sexual intercourse	1.0		1.1		0.9		1.0	
Age difference between partners, in years	1.0		1.0		0.9		0.9	*
Age first received information on contraception	1.0		0.9	*	1.0		0.9	**
CONTRACEPTIVE USE AT FIRST SEXUAL INTERCOURSE		**		***		*		***
Any condom use	REF		REF		REF		REF	
Any method other than condoms	NA		0.5	*	NA		1.3	
No contraceptive used	2.7	***	1.9	***	1.6		1.9	***
EMOTIONS AND SUBSTANCE USE AT FIRST SEXUAL INTERCOURSE								
Anxiety at first sexual intercourse		*						
Slight/not at all	REF		REF		REF		REF	
Moderate	0.8		1.1		0.8		0.8	
Extreme/considerable	4.9	**	1.0		1.5		1.0	
Guilt at first sexual intercourse				***				
Slight/not at all	REF		REF		REF		REF	
Moderate	1.2		1.4		0.6		1.5	
Extreme/considerable	1.4		1.9		1.5		1.6	
Under the influence of alcohol or drugs	1.4		1.8	***	0.9		1.6	**
RELATIONSHIP with FIRST SEXUAL PARTNER				*				
Casual acquaintance	REF		REF		REF		REF	
Friend	1.6		0.4	*	1.3		0.9	
Occasional dating	3.6		0.6		1.6		0.9	
Steady dating	4.9		0.4	**	1.0		0.5	*
Committed love relationship	5.3		0.4	**	0.8		0.7	
SEX EDUCATION (sex ed)								
Never had a class with sexuality content	1.2		2.0		0.4		1.2	
Perceived adequacy of sex ed from parents								**
Adequate	REF		REF		REF		REF	
Neither/Moderate	0.7		1.2		1.0		1.1	
Inadequate	1.2		1.2		0.9		1.8	***

Continued

*P<0.10, **P<0.05, ***P<0.01

Table 2. Univariate Analyses: Descriptive Characteristics by Non-Verbal Consent, by Gender and Race College Students Aged 18-25 (N = 1883) (Con't)

	Black Women (*N* = 254)		Non-Hispanic White Women (*N* = 910)		Black Men (*N* = 205)		Non-Hispanic White Men (*N* = 514)	
	Exp(β) Odds Ratio		Exp(β) Odds Ratio		Exp(β) Odds Ratio		Exp(β) Odds Ratio	
Perceived adequacy of sex ed in school (pre-college)								
Adequate	REF		REF		REF		REF	
Neither/Moderate	0.8		0.9		0.8		1.3	
Inadequate	1.3		1.3		1.0		1.1	
RELIGION								
Religious denomination				***				
None	REF		REF		REF		REF	
Mainline Protestant	0.9		0.6	**	1.3		1.1	
Baptist	0.5		1.2		0.7		0.9	
Catholic	0.8		0.6	**	0.5		0.9	
Institutional Sect	0.2	**	1.2		0.6		0.2	
Fundamentalist	0.7		1.3		0.9		0.8	
Non-Christian	NA		3.7		NA		0.4	
Level of religiousness compared to others								***
Less religious	REF		REF		REF		REF	
About as religious	1.4		1.1		1.3		1.7	***
More religious	1.3		0.9		0.6		2.0	**
Current level of religious commitment								**
Not devout	REF		REF		REF		REF	
Moderately devout	1.0		1.3	*	1.1		1.6	**
Devout	0.5		1.6	*	0.7		2.3	**

*P<0.10, **P<0.05, ***P<0.01

nothing about the contexts in which discussions about intercourse occurred or failed to occur, whether discussions took place in the days or weeks *prior* to sexual intercourse, or what sort of nonverbal processes may have served as proxy indicators of consent (e.g., placing a condom in a partner's hand). Nor did we ask about the level of *wantedness* of first intercourse, which is associated but not commensurate with consent or intent.[37, 38]

Given recall issues, some respondents may not have correctly remembered all of the specifics of their first intercourse experience. Studies have shown that respondents can misclassify earlier reports of their age at first intercourse,[40,41] and the issue of consent may also be prone to misclassification. But other studies have found very strong consistency of reports of age at first intercourse, especially among younger adults.[42] First sexual intercourse is likely to be a vivid event for many respondents,[5, 43] and the time gap between first intercourse and the reporting of this event will be shorter in a sample of college students than in a sample of older adults. Furthermore, dichotomous or categorical measures can increase the reliability of self reporting of sexual behaviors; several studies document that accuracy decreases as the frequency of the target behavior

Table 3. Multivariate Analyses (Logistic Regression): Predictors of Non-Verbal Consent at First Sexual Intercourse, by Gender, College Students Aged 18–25 (*N* = 1883)

	Black Women (*N* = 254)		Non-Hispanic White Women (*N* = 910)		Black Men (*N* = 205)		Non-Hispanic White Men (*N* = 514)	
Predictor	Adjusted Estimates: Exp(β) Odds Ratio		Adjusted Estimates: Exp(β) Odds Ratio		Adjusted Estimates: Exp(β) Odds Ratio		Adjusted Estimates: Exp(β) Odds Ratio	
AGE CHARACTERISTICS								
Age at first SI			0.86	***				
Age first received info on contraception			1.07	*			1.11	**
CONTRACEPTIVE USE AT FIRST SEXUAL INTERCOURSE		***				**		*
Any condom use	REF		REF		REF		REF	
Any method other than condoms	-		0.51	*	-		0.61	**
No contraceptive used	2.65	***	1.98	***	1.89	*	0.58	
EMOTIONS AND SUBSTANCE USE AT FIRST SEXUAL INTERCOURSE								
Anxiety at first sexual intercourse		**						
Extreme/considerable	1.03							
Moderate	2.16	**						
Slight/not at all	REF							
Under the influence of alcohol or drugs			1.86	***				
RELATIONSHIP WITH FIRST SEXUAL PARTNER								**
Committed love relationship							REF	
Steady dating							0.66	
Occasional dating							0.42	**
Friend							0.84	
Casual acquaintance							0.86	
SEX EDUCATION								
Never had a sex ed class			2.78	*				
Perceived adequacy of sex ed from parents								*
Inadequate							1.69	**
Neither/Moderate							1.11	
Adequate							REF	
RELIGION								
Religious denomination				***				
Mainline Protestant			0.49	**				
Baptist			1.00					
Catholic			0.51	**				
Institutional Sect			0.88					

Continued

*p<.10, **p<.05, ***p<.01

Table 3. Multivariate Analyses (Logistic Regression): Predictors of Non-Verbal Consent at First Sexual Intercourse, by Gender, College Students Aged 18–25 (*N* = 1883) (Con't)

	Black Women (*N* = 254)		Non-Hispanic White Women (*N* = 910)		Black Men (*N* = 205)		Non-Hispanic White Men (*N* = 514)	
Predictor	Adjusted Estimates: Exp(β) Odds Ratio		Adjusted Estimates: Exp(β) Odds Ratio		Adjusted Estimates: Exp(β) Odds Ratio		Adjusted Estimates: Exp(β) Odds Ratio	
Fundamentalist			1.24					
Non-Christian			3.57					
None			REF					
Level of religiousness compared to others						**		
Less religious					REF			
About as religious					2.74	*		
More religious					3.23	**		
Current level of religious commitment				**				*
Devout			REF				2.32	**
Moderately devout			1.51	**			1.35	
Not devout			1.83	**			REF	
Nagelkerke R2	0.096	***	0.12	***	0.084	**	0.10	***

*p<.10, **p<.05, ***p<.01

Table 4. Multivariate Analysis (Logistic Regression): Can Type of Consent Predict Lack of Contraceptive Use at First Sexual Intercourse? By Gender, College Students Aged 18-25 (*N* = 1883)

	Women (*N* = 1164)		Men (*N* = 719)	
Predictor	Adjusted Estimates: Exp(β) Odds Ratio (95% CI)		Adjusted Estimates: Exp(β) Odds Ratio (95% CI)	
TYPE OF CONSENT				
Verbal	REF		REF	
Non-verbal, implied	2.28	***	1.30	
Nagelkerke R2	0.095	***	0.179	***

Control variables include age at first sexual intercourse (SI), partner's age, age first learned about contraception, guilt at first SI, anxiety at first SI, intoxicated at first SI, type of relationship with first partner, ever had a class with sexuality content, perceived adequacy of sex education from parents, perceived adequacy of sex education from school, religious denomination, level of religiousness compared to others, level of religious devotion
The only significant covariates for women were age at first SI (β=.8; P=0.000) and partner's age at first SI (β=1.1, P=0.001)
The only significant covariates for men were age at first SI (β=.8; P=0.001), age at which one learned about contraception (β=1.1, P=0.066), and considerable or extreme guilt at first SI (versus no or slight guilt) (OR=2.9, P=0.001)
*P<0.10, **P<0.05, ***P<0.01

increases, with low-frequency events more salient.[44] Finally, information on first sexual intercourse always depends on self-report, so the importance of assessing sexual health behaviors as part of research activities necessitates the use of self report measures.[45]

Further, given this study's use of a non-random sample of non-Hispanic white and black students at four universities, results cannot be extrapolated to all U.S. college students. We encourage future studies of consent to explore whether similar findings would emerge from more representative samples. While our sample represents college students from four distinct regions, analyses did not include school location as a possible predictor, even though region has been shown to influence sexual attitudes and behaviors.[46] However, family background and race have been found to be more influential than region or religion in shaping sexual attitudes and behavior.[34] Thus, in the spirit of more parsimonious models, we deliberately excluded region from the analyses.

Despite these limitations, our data allowed us to conduct an exploratory study of a previously understudied topic: the prevalence of implied versus verbal consent at first intercourse, and the implications of type of consent for healthier contraceptive behaviors at first sexual intercourse. We have attempted to make manifest an aspect of sexual initiation unexplored in the previous literature and to highlight a potentially critical point of sexual health intervention.

TRANSLATION TO HEALTH EDUCATION PRACTICE

Our study strongly underlines the need for increased instruction in sexual communication skills among both young women *and* young men.[10, 14] Teaching young people about contraceptive methods will lead to little benefit if they do not have the tools to discuss how and when to use them with their partners. The parameters of "comprehensive sexuality education" must expand to include sexual fluency and verbal communication skills. Although few programs help young people identify and articulate their sexual preferences and health needs, several researchers have explored how to improve sexual communication as a way to enhance prevention of unintended pregnancy and HIV. For example, Lear[47] has found greater sexual empowerment and sexual responsibility among those young adults who incorporate a degree of fun and humor into their sexual communication. Along similar lines, Philpott et al.[48] emphasize both fun and pleasure in sexual health programming, including direct discussions about how to get condoms to feel better.[48] However, sexuality education approaches need to remain sensitive to different needs and preferences within and across groups.[47] For example, African Americans may prefer more indirect forms of sexual communication, given cultural and religious values.[49] These preferences have led Wyatt[49] to suggest that young people need to learn about both *direct* communication skills, before and during sex, and less direct, nonverbal interactions.

We agree with Ingham[50] and Mitchell and Wellings[16] regarding the limitations of information-based, individually-targeted interventions. Both health educators and medical professionals need instead to focus on the larger socio-cultural context of sexual encounters, and on the ways in which we can help socialize young people to feel more comfortable about sex and contraception. Our culture, like most cultures, lacks a language with which to discuss sex, let alone the prevention of pregnancy and STIs. Prevention programs need to address and even develop a language with which all of us, young adults included, can comfortably discuss sexuality and pregnancy and disease prevention.[15]

REFERENCES

1. Buhi ER, Goodson P. Predictors of adolescent sexual behavior and intention: a theory-guided systematic review. *J Adolesc Health.* 2007;40(1):4-21.

2. Michels TM, Kropp RY, Eyre SL, Halpern-Felsher BL. Initiating sexual experiences: How do young adolescents make decisions regarding early sexual activity? *J Res Adolescence.* 2005;15(4):583-607.

3. Rosenthal SL, Von Ranson KM, Cotton S, Biro FM, Mills L, Succop PA. Sexual initiation: predictors and developmental trends. *Sex Transm Dis.* 2001;28(9):527-532.

4. Skinner SR, Smith J, Fenwick J, Fyfe S, Hendriks J. Perceptions and experiences of first sexual intercourse in Australian adolescent females. *J Adolesc Health.* 2008;43(6):593-599.

5. Carpenter L. *Virginity Lost: An Intimate Portrait of First Sexual Experiences*. New York: New York University; 2005.

6. Thompson S. *Going All the Way: Teenage Girls' Tales of Sex, Romance, and Pregnancy*. New York: Hill and Wang; 1995.

7. Tolman DL. *Dilemmas of Desire: Teenage Girls Talk about Sexuality*. Cambridge, MA: Harvard University Press; 2002.

8. Manlove J, Ryan S, Franzetta K. Patterns of contraceptive use within teenagers' first sexual relationships. *Perspect Sex Reprod Health.* 2003;35(6):246-255.

9. Terrell L, Fortenberry D, Ofner S, Tu WZ. Age at 1st coitus and interval after 1st coitus until 1st sexually transmitted infection among adolescent women. *J Adolesc Health.* 2008;42(2):S12-S12.

10. O'Sullivan LF, Cheng MM, Harris KM, Brooks-Gunn J. I wanna hold your hand: The progression of social, romantic and sexual events in adolescent relationships. *Perspect Sex Reprod Health.* 2007;39(2):100-107.

11. Mitchell K, Wellings K. First sexual intercourse: Anticipation and communication. Interviews with young people in England. *J Adolescence.* 1998;21(6):717-726.

12. Rosenthal D, Peart R. The rules of the game: Teenagers communicating about sex. *J Adolescence.* 1996;19(4):321-332.

13. Ryan S, Franzetta K, Manlove J, Holcombe E. Adolescents' discussions about contraception or STDs with partners before first sex. *Perspect Sex Reprod Health.* 2007;39(3):149-157.

14. Stone N, Ingham R. Factors affecting British teenagers' contraceptive use at first intercourse: the importance of partner communication. *Perspect Sex Reprod Health.* 2002;34(4):191-197.

15. Pliskin KL. Verbal intercourse and sexual communication: impediments to STD prevention. *Med Anthropol Q.* 1997;11(1):89-109.

16. Mitchell K, Wellings K. The role of ambiguity in sexual encounters between young people

in England. *Cult Health Sex.* 2002;4(4):393-408.

17. Moore NB, Davidson JK, Sr. Communicating with new sex partners: college women and questions that make a difference. *J Sex Marital Ther.* 2000;26(3):215-230.

18. Murnen SK, Perot A, Byrne D. Coping with unwanted sexual activity - normative responses, situational determinants, and individual differences. *J Sex Res.* 1989;26(1):85-106.

19. Coleman L, Ingham R. Contrasting strategies used by young people to ensure condom use: some findings from a qualitative research project. *AIDS Care.* 1999;11(4):473-479.

20. Fine M. Sexuality, schooling, and adolescent females: The missing discourse of desire. *Harvard Educ Rev.* 1988;58(1):29-53.

21. Holland J, Ramazanoglu C, Scott C, Sharpe S, Thomson R. Between embarrassment and trust: Young women and the diversity in condom use. In: Aggleton P, Hart G, Davies P, eds. *AIDS - Responses, Interventions, and Care.* New York: Falmer Press; 1991:127-148.

22. Holland J, Ramazanoglu C, Sharpe S, Thomson R. *The Male in the Head: Young People, Heterosexuality and Power*. London: Turfnell Press; 1998.

23. Dworkin SL, O'Sullivan L. Actual versus desired initiation patterns among a sample of college men: Tapping disjunctures within traditional male sexual scripts. *J Sex Res.* 2005;42(2):150-158.

24. O'Byrne R, Rapley M, Hansen S. 'You couldn't say "No", could you?': Young men's understandings of sexual refusal. *Fem Psychol.* 2006;16(2):133-154.

25. Santelli JS, Lowry R, Brener ND, Robin L. The association of sexual behaviors with socioeconomic status, family structure, and race/ethnicity among US adolescents. *Am J Public Health.* 2000;90(10):1582-1588.

26. Feldman SS, Turner RA, Araujo K. Interpersonal context as an influence on sexual timetables of youths: Gender and ethnic effects. *J Res Adolescence.* 1999;9(1):25-52.

27. O'Donnell L, O'Donnell CR, Stueve A. Early sexual initiation and subsequent sex-related risks among urban minority youth: The Reach for Health Study. *Fam Plann Perspect.* 2001;33(6):268-275.

28. Santelli JS, Brener ND, Lowry R, Bhatt A, Zabin LS. Multiple sexual partners among US adolescents and young adults. *Fam Plann Perspect.* 1998;30(6):271-275.

29. Kaestle CE, Morisky DE, Wiley DJ. Sexual intercourse and the age difference between adolescent females and their romantic partners. *Perspect Sex Reprod Health.* 2002;34(6):304-309.

30. Darroch JE, Landry DJ, Oslak S. Age differences between sexual partners in the United States. *Family Plann Perspect.* 1999;31(4):160-167.

31. Davidson JK, Moore NB. Masturbation and premarital sexual intercourse among college women: making choices for fulfillment. *J Sex Marital Ther.* 1994;20(3):178-199.

32. Cooper ML. Alcohol use and risky sexual behavior among college students and youth: evaluating the evidence. *J Stud Alcohol.* 2002;14(suppl.):101-117.

33. Regnerus M. *Forbidden Fruit: Sex & Religion in the Lives of American Teenagers*. Oxford ; New York: Oxford University Press; 2007.

34. Davidson JKS, Moore NB. Guilt and lack of orgasm during sexual intercourse: Myth versus reality among college women. *J Sex Marital Ther.* Fall 1994;20(3):153-174.

35. Davidson JK, Moore NB, Earle JR, Davis R. Sexual attitudes and behavior at four universities: Do region, race, and/or religion matter? *Adolescence.* 2008;43(170):189-220.

36. Kaestle E. Sexual insistence and disliked sexual activities in young adulthood: Differences by gender and relationship characteristics. *Perspect Sex Reprod Health.* 2009;41(1):33-39.

37. Muehlenhard CL, Peterson ZD. Wanting and not wanting sex: The missing discourse of ambivalence. *Fem Psychol.* 2005;15(1):15-20.

38. Peterson ZD, Muehlenhard CL. Conceptualizing the "wantedness" of women's consensual and nonconsensual sexual experiences: Implications for how women label their experiences with rape. *J Sex Res.* 2007;44(1):72-88.

39. Higgins JA, Hirsch JS. Pleasure and power: incorporating sexuality and inequality into research on contraceptive use and unintended pregnancy. *Am J Public Health.* 2008;98(10):1803-1813.

40. Lauritsen JL, Swicegood CG. The consistency of self-reported initiation of sexual activity. *Fam Plann Perspect.* 1997;29(5):215-221.

41. Upchurch DM, Lillard LA, Aneshensel CS, Fang Li N. Inconsistencies in reporting the occurrence and timing of first intercourse among adolescents. *J Sex Res.* 2002;39(3):197-206.

42. Dunne MP, Martin NG, Statham DJ, Pangan T, Madden PA, Heath AC. The consistency of recalled age at first sexual intercourse. *J Biosoc Sci.* 1997;29(1):1-7.

43. Kaestle CE, Halpern CT, Miller WC, Ford CA. Young age at first sexual intercourse and sexually transmitted infections in adolescents and young adults. *Am J Epidemiol.* 2005;161(8):774-780.

44. Schroder KE, Carey MP, Vanable PA. Methodological challenges in research on sexual risk behavior: II. Accuracy of self-reports. *Ann Behav Med.* 2003;26(2):104-123.

45. Brener ND, Billy JO, Grady WR. Assessment of factors affecting the validity of self-reported health-risk behavior among adolescents: evidence from the scientific literature. *J Adolesc Health.* 2003;33(6):436-457.

46. Laumann EO, Gagnon JH, Michael RT, Michaels S. *The Social Organization of Sexuality: Sexual Practices in the United States*. Chicago: University of Chicago Press; 1994.

47. Lear D. Sexual communication in the age of AIDS: the construction of risk and trust among young adults. *Soc Sci Med.* 1995;41(9):1311-1323.

48. Philpott A, Knerr W, Boydell V. Pleasure and prevention: when good sex is safer sex. *Reprod Health Matters.* 2006;14(28):23-31.

49. Wyatt GE. Enhancing cultural and contextual intervention strategies to reduce HIV/AIDS among African Americans. *Am J Public Health.* 2009;99(11):1941-1945.

50. Ingham R. Some speculations on the concept of rationality. In: Albrecht G, ed. *Advances in Medical Sociology, Vol. 4. A Reconsideration of Health Behavior Change Models.* Greenwich, CT: JAI Press; 1994:89-111.