The Relationship between Contraceptive Method and Sexual Pleasure and Satisfaction

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ABSTRACT

Context: We know little about how condoms and other contraceptives influence women's sexual enjoyment, which could potentially shape use patterns. Few quantitative analyses have compared different methods' effects on women's sexual pleasure and satisfaction.

Methods: We used data from an online survey of women's sexual health and functioning to examine how three categories of contraceptive use—hormonal method only, condoms primarily, and dual use—could help predict decreased sexual pleasure and overall sexual satisfaction.

Results: In analyses controlling for age, length of relationship, and other demographic and sexual history variables, male condoms were most strongly associated with decreased pleasure, whether used alone or in conjunction with hormonal methods. Women who used hormonal methods alone were least likely to report decreased pleasure, but they also had significantly lower overall scores of sexual satisfaction compared with the other two groups. Dual users, or women who used both condoms and a hormonal method, reported the highest sexual satisfaction scores.

Conclusions: Because male condoms were viewed by many users as decreasing their sexual pleasure, sexual risk practices are likely to be affected. Although hormonal only users were highly unlikely to report decreased pleasure, they reported weak sexual satisfaction. Dual users, who had the highest sexual satisfaction scores, may have been able to enjoy sex more since they felt more fully protected against unwanted pregnancy—consistent with previous qualitative documentation of "eroticizing safety." This preliminary study suggests that contraceptives differentially affect various facets of sexuality, warranting further research into these sexual dimensions and how they influence contraceptive practices.

INTRODUCTION & BACKGROUND

When we consider that methods of fertility control and STI prophylaxis are expressly designed for use during sex, we know surprisingly little about how contraception affects sexual enjoyment and functioning (1, 2), particularly for women (3, 4). The literature on women and male condoms is one example of this sexual void—which we have previously termed "the pleasure deficit" (5). Public health programs often rely on women to carry out sexual risk reduction through condom use, even though women do not "use" or "wear" male condoms. Research indicates that women may lack the power to press for condoms (6-10), and that even when women are *able* to negotiate for condom use, they may be disinclined to do so out of desire for sex that is "close," loving, and intimate (11-15). We still know little, however, about women's *sexual* experiences with male condoms, or how their risk behaviors may be shaped by their perceptions of how condoms reduce sexual sensation and enjoyment (for three exceptions, see (16-18)).

As is true for the literature on women and condoms, very few studies on hormonal contraceptives have systematically assessed how these methods affect sexual functioning or pleasure (4, 19, 20). Contraceptive researchers have thoroughly documented hormonal methods' effect on ovulation (21). Far fewer have demonstrated their effect on the peak in sexual interest that many women experience during ovulation (22) or have explored the ways that methods affect sexual enjoyment (either positively or negatively), thereby altering use patterns (for exceptions, see (19, 23)). For other widely used non-hormonal methods, including tubal ligation and the IUD, research also is lacking on sexuality (again, for exceptions, see (24, 25).) This inattention to the sexual acceptability and sexual side effects of women's methods is even more striking when juxtaposed with that afforded to the hormonal methods under

development for men. Research on male-based methods is highly marked by concern for their effects on libido, sex drive, and sexual functioning (26-28), with an implicit recognition that uptake will be limited if men's pleasure-seeking is compromised.

Though the literature on male condoms and hormonal methods has largely neglected women's sexuality, some investigations of newer methods—especially female condoms and potential microbicides—have examined influences on sexual functioning, with findings suggesting that women's contraceptive behaviors are influenced at least in part by sexual acceptability and side effects. Research on female condoms has been particularly innovative in this regard. Women's (and men's) sexual comfort with and enjoyment of this method, including the potential increase of clitoral stimulation through its outer ring, reportedly contribute to uptake and continuation (29-33), whereas discomfort from the inner ring led to non-adoption or discontinuation. Studies of vaginal microbicides have also documented how they change various aspects of the sexual experience (34-41). In a study of the features most likely to shape contraceptive method choice, women ranked "lack of interference with sexual pleasure" as a "very important" consideration as often as men did (30% of men, 28% of women) (42). Severy and Newcomer have argued that concern for sexual intimacy and pleasure plays a central role in determining user perspectives regarding new methods (43). Similarly, in a qualitative study on sexual pleasure and contraceptive use in the southeastern United States, the way contraceptives altered "sexual aesthetics" (sensation, libido, lubrication, spontaneity and other sexual attributes) mattered to women and men equally, and shaped both the choice of method and manner of use (44, 45).

These studies suggest that uptake and continuation of contraceptive methods is influenced by how they make sex feel, and that sexual experience and contraceptive experience may be related reciprocally. However, few of these studies explore multiple forms of

contraception simultaneously, particularly the reversible methods used most frequently in the

U.S.: hormonal methods, especially oral contraceptives, and male condoms (46). Further,

although we and other researchers have explored some of these issues qualitatively,

quantitative analyses are generally lacking. Finally, the existing research tells us little about

how contraceptives affect the different dimensions of sexuality: for example, physical sensation,

spontaneity, ability to experience of orgasm, partner's enjoyment, and/or overall satisfaction.

We had the opportunity to conduct a preliminary quantitative exploration of these

topics using an online survey of women's sexual functioning and well being. Internet-based

convenience samples have been demonstrated useful for exploring understudied issues and/or

collecting data from hard-to-reach populations (*e.g.*, asexual individuals (47) or gay men who

seek anonymous sex partners by way of the Internet (48)). To our knowledge, no other

secondary dataset could allow for exploration of our research question, that is, whether

contraceptive method type can help predict women's sexual enjoyment or *lack* of enjoyment.

The Internet survey not only allowed us to examine a number of different contraceptive

methods simultaneously, but it also captured multiple dimensions of women's sexuality.

METHODS

Procedures and Participants[1]

Data were collected in the course of an online health and sexuality survey of U.S.

women conducted by researchers at Indiana University's Kinsey Institute for Research in Sex,

Gender, and Reproduction (including the third and fourth authors of this paper). The global

aims of this survey, entitled the "Women's Well-Being and Sexuality Study," were (1) to

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[1] Please note that the final PAA paper will contain more complete information on the survey procedures and participants.

conduct a survey of a measure recently developed by Graham and Sanders, the Sexual Excitation and Sexual Inhibition Index for Women, or SESII-W (49); and (2) to collect data on current sexual preferences and practices of U.S. women from all ranges of the sexual orientation scale, including homosexual, bisexual, heterosexual, and transgender. Online respondents were recruited through advertisements placed in the Kinsey Institute newsletter, email list serves, and by word-of-mouth. A different survey URL for each advertisement allowed researchers to track the number of respondents recruited from each advertising venue. The protocol for the study was approved by the Indiana University IRB, and the anonymity of the online survey meant that the data were free of all identifying information.

The survey contained questions regarding respondents' sexual orientation and the gender of their sexual partners. Given our interest in contraceptive use, we excluded our analyses to those respondents who reported a history of sexual intercourse with men and who had completed all parts of the survey (N=624). We further restricted the current analyses to those respondents who (1) had engaged in sexual activity with a man in the last four weeks; (2) were not infertile, either naturally or due to elective sterilization, hysterectomy or other surgical procedure; and (3) had used a reversible method of contraception in the last four weeks (N=258).

Measures

Contraceptive method

Women were asked to indicate whether or not they had used any of 15 different reversible contraceptive methods during the past four weeks. Because of the relatively low prevalence of use for many of the methods, which precluded separate analyses for each one, we created a contraceptive method variable with four mutually exclusive categories: (1) users of a hormonal method (including combined hormone birth control pills, progestin-only birth control

pills, the patch, the NuvaRing, and Depo Provera) and no other method, referred to

subsequently as "hormonal only users"; (2) users of male condoms only or male condoms in

combination with withdrawal, spermicide, and/or outercourse, referred to as "condom

primarily users"; (3) users of *both* a hormonal method and male condoms, either with or

without additional use of spermicide, withdrawal, and/or outercourse, referred to as "dual

users"; and (4) women using any and all other reversible methods, including the diaphragm,

natural family planning, the IUD, and/or emergency contraception, or women who used

withdrawal only, outercourse only, or spermicides only, referred to as "other users". The

fourth group was excluded from most analyses due to the heterogeneity of the category.

The literature usually operationalizes "condom use" as the *sole* use of condoms, and

"dual use" as hormonal methods in conjunction with male condoms alone. The detailed

questions on contraceptive use in the Women's Well-being and Sexuality Survey allowed us to

more fully characterize what condom and dual use entails for many typical users. In the

current sample, most women who reported use of male condoms in the last four weeks also

reported use of withdrawal, spermicide, and/or outercourse; very few women used male

condoms *and no other method* in the last month (N=27, or 10%). We believe this broader

definition of condom use (that is, use of condoms *primarily*) represents a more accurate depiction

of how most couples use condoms—that is, neither alone nor every time, but in conjunction

with other risk reduction practices. This broader definition is reflected in both our "condoms

primarily" and our "dual use" categories. A substantial number of women, however, used a

hormonal method without the use of any additional method, which is why we created the

"hormonal method only" category.

Sexuality outcomes

Decreased sexual pleasure due to contraceptive method served as one of two outcome variables. After respondents indicated which contraceptive method(s) they had used in the last four weeks, they were asked, "Did your use of contraceptive or STI protection increase or decrease your sexual enjoyment in the last 4 weeks?" Possible responses included "increased," "decreased," and "neither." Our analyses focused on those who responded "decreased"; we combined those respondents who said "increased" or "neither" into one category. We dichotomized the variable in this way because we wanted to look specifically at detractions from pleasure, given how they could undermine use and increase sexual risk behavior.

Sexual satisfaction score represents a standardized mean of the following three questions: "How satisfied are you with your sex life?," "How would you rate your sexual relationship?," and "If in a sexual relationship, how satisfied are you with your sexual relationship?" All three questions had likert-scale responses ranging from "very satisfied" to "very dissatisfied" (seven categories) or "excellent" to "poor" (five categories). Values ranged from a lowest possible score of -2.37 (indicating the poorest sexual satisfaction) to .999 (indicating the highest possible sexual satisfaction), with a mean score of 0.

Covariates

The WWSS survey collected demographic information that allowed us to control for certain variables known to be associated with type of contraceptive used. These included age, parity, marital status, relationship length, level of education, household income, STI history, number of current sexual partners, and employment status.

Statistical Analyses

We compared women in each of the four primary contraceptive categories (hormonal only, condoms primarily, and dual users) with respect to demographic characteristics using chi-square tests and ANOVA. We also tested for univariate associations between the covariates

and each of the two outcome variables, using chi-square statistics, F-tests, and correlation coefficients as appropriate. For further analyses, including regression tests, we included only three of the contraceptive categories (hormonal only, condoms primarily, and dual use). We used multiple logistic regression analysis to explore whether contraceptive method predicted decreased pleasure, and multiple linear regression to examine its relationship to sexual satisfaction score), while controlling for age, length of relationship, and other covariates that had been associated with the outcomes in univariate analyses. Those covariates that were independently associated with the outcome variables but that failed to change the betas by 10% or more in the multivariate models were dropped from the final models. However, we included age and relationship length in each of the multivariate models, regardless of their univariate associations with the outcomes, since these two variables are so strongly associated with contraceptive use and sexuality.

RESULTS

Demographic Characteristics and Contraceptive Use

Table 1 provides a demographic overview of the sample. Women in the sample were largely young (mean age=25.5, SD = 6.59), never married (51%), childless (72%), and well educated (82% had spent at least some time at college). Most women were employed full time or part-time (60%) and a third (33%) were full time students, suggesting strong motivation to use contraception and avoid unintended pregnancy. Most women were in long-term relationships with a single partner. Despite the sample's relative youth and nulliparity, over half of the respondents (56%) had been in their primary relationship for over two years and

only one-fifth (20%) had been in their relationship for less than 6 months. Almost two-thirds of the sample (64%) reported never having been told that they had an STI.

Contraceptive use patterns: Overall, about a third of women had used only a hormonal method in the last four weeks ("hormonal only" group) (31%, N=80); a quarter reported use of male condoms alone or in conjunction with spermicide, withdrawal, or outercourse ("condoms primarily" group) (25%, N=65); a fifth had used both a hormonal method and male condoms, either with or without spermicide, withdrawal, or outercourse ("dual users" group) (21%, N=53); and a quarter had used other reversible methods including the IUD, the diaphragm, natural family planning, emergency contraception, or withdrawal, spermicides, or outercourse not in conjunction with condoms ("other users" group) (23%, N=60).

As expected, women's contraceptive method varied by demographic characteristics (Table 2). Dual users, followed by condom primarily users, were more likely to be young, single, childless, and full time students than hormonal only users and other users. A higher percentage of dual users were more likely to be in newer relationships (*i.e.,* fewer than six months) (36%) than condom primarily users (21%) or hormonal only users (14%) (Chi-square statistic=20.3, p=.016); they were also more likely to have never been married (78%) than condom primarily users (54%) or hormonal only users (44%) (Chi-square statistic=24.7, p=.003). Dual users were also more likely to be younger (mean age=22.3 years) than condom primarily users (mean age=25), hormonal only user (mean age=25), or other users (mean age=29) (F statistic=9.5, p=.000). Contrary to expectation, condom primarily users were more likely to have had least one lifetime STI (72%) compared to hormonal only users (56%) or dual users (34%), although these differences were not statistically significant (Chi-square statistic=4.2, p=.24).

Predictors of Decreased Sexual Pleasure due to Contraceptive Method

Univariate analyses. Overall, approximately one-fifth of women (19.1%) reported that their contraceptive method(s) had decreased their sexual pleasure in the past four weeks (not shown). However, this percentage differed strongly by contraceptive method (Table 3). While only 4% of hormonal only users reported decreased pleasure due to their method, 24% of both condom primarily users and dual users did so (Chi-square statistic=14.6, p=.002). Relative to hormonal only users, women who used condoms primarily had six times the odds of reporting decreased pleasure (OR 5.8, 95% CI=1.6, 21.2, p<.008), as did dual method users (OR=6.3, 95% CI=1.6, 24.1; p<.007). *Age* and *STI history* were the only covariates significantly associated with decreased pleasure. Women with no STI history were more than twice as likely to report that their method detracted from sexual pleasure (24% versus 11%, p=.015). Older women were also more likely than younger women to report decreased enjoyment due to their contraceptive (p=.000).

Multivariate logistic regression analyses. When controlling for relationship length, age, and STI history, condom use remained a significant predictor of decreased enjoyment due to method. Compared to hormonal only users, the odds for condom primarily users to report that their method decreased their sexual enjoyment remained six times greater (adjusted OR=6.2; 95% CI= 1.6, 24.2); p=.009). Dual method users had an odds seven times greater than hormonal users to report decreased pleasure (adjusted OR= 7.1; 95% CI=1.8, 28.6; p=.006).

Predictors of Overall Sexual Satisfaction (Table 4)

Univariate analyses: Women's overall sexual satisfaction scores ranged from the lowest possible score of -2.37 to the maximum score of .999, with a mean of 0.00 and a standard deviation of .953. In the ANOVA analyses, several covariates were associated with the overall

sexual satisfaction score (Table 4). Relationship length was strongly and negatively correlated

with sexual satisfaction (F=4.78, p<.000). Marital status was also significantly associated, with

single women (either never married or separated/divorced) reporting the highest sexual

satisfaction scores and married women reporting the lowest (F=6.34, p=000). Less strongly but

still significantly associated covariates included age and STI history. Younger women were also

more likely to report higher levels of sexual satisfaction (F=1.31, p=.16; Pearson's correlation

coefficient (not shown)= -.122, p=.057). Finally, women with no known STI history scored

higher on sexual satisfaction (F=3.50, p=.06).

    <u>Multiple linear regression analyses</u>. These analyses demonstrated that contraceptive

method remained a significant predictor of overall sexual satisfaction, even when controlling

for age, relationship length, marital status, parity, and STI history. Notably, however, the

contraceptive patterns differed from the previous analysis. Hormonal only users had the lowest

sexual satisfaction scores and dual users the highest. Compared to hormonal only users, dual

users had scores that were .39 points higher (p=.036). Condom primarily users also had higher

scores than hormonal only users, but the difference was not statistically significant (p=.485).

DISCUSSION

    The findings from this preliminary study suggest that contraceptive method type shapes

women's sexual pleasure and enjoyment. However, this influence is moderated not only by

method, but by dimension of sexuality. When asked directly about the effect of their

contraceptive method(s) on their sexual pleasure in the last four weeks, women who used male

condoms (either on their own or in conjunction with hormonal methods or withdrawal) were

significantly more likely to report decreased pleasure. Dual users' reports of decreased

pleasure were almost identical, suggesting that condoms "trumped" hormonal method in terms of their effects on immediate erotic sensation. However, when asked about their sexual satisfaction more broadly, condom primarily users did not have the lowest overall sexual satisfaction scores. Indeed women classed as "dual users" (mainly women using condoms and the pill) had the highest sexual satisfaction scores. Further, although women using hormonal contraception only were very unlikely to associate their method with decreased sexual pleasure, they had the lowest sexual satisfaction scores.

We suggest that this paradoxical disparity partly reflect different degrees of salience—that is, how directly or indirectly women think of their contraceptive method when asked about particular dimensions of sexuality. Given male condoms' undeniable presence during sex, both physically and in terms of how they interrupt the sexual flow, predictably they may come to mind more than hormonal methods when women are asked about the effect of their method on sexual pleasure. However, when asked about overall sexual satisfaction separately from their family planning practices, women are unlikely to make direct associations with contraceptive method. We argue that the more direct association—that is, which methods are associated with decreased pleasure—is more likely to change contraceptive practices and, potentially, sexual risk. Even if use of male condoms is not associated with overall sexual satisfaction, the sexual *attributes* women give to condoms are likely to alter women's attitudes and use patterns. If women think male condoms detract from their pleasure, they will be less inclined to use them at each sexual encounter.

The current analysis augments findings from a recent qualitative study, in which women reported that condoms "cover up" sensation and exacerbate vaginal dryness, which led them to use them intermittently or not at all (44). In fact, a greater proportion of women than men said they disliked the feeling of condoms. Taken together, these studies add a physical,

aesthetic layer to prior research, which has focused primarily on the symbolic and emotional aspects of women's resistance to condoms. The public health field has been slow to consider the possibility that condoms' effects on pleasure may alter women's preferences or use patterns (although certainly exceptions exist (16, 18, 50, 51)). In contrast, there have been frequent references to the fact that many men do not like using condoms because they curtail sexual sensation (52-54).) If public health practitioners continue to rely on women to promote and use condoms, they must acknowledge and respond to women's sexual resistance to them.

The current study supports another finding from recent qualitative work: *the eroticization of safety* (44), which dovetails with the dual users' higher sexual satisfaction scores. A number of respondents in that qualitative study could not "let go" or get caught up in the heat of the sexual moment unless properly protected from unwanted pregnancy and disease, sometimes with two or even three methods. For risk-averse women and men for whom avoiding pregnancy and/or disease were imperative, effective prophylaxis was a precondition of enjoying sex to its fullest. These respondents experienced a certain kind of pleasure in taking responsibility, or a <u>dis</u>pleasure in not being protected. However, social class shaped who was most likely to eroticize safety. Socially advantaged respondents were particularly likely to eroticize contraceptive use, as contraception was seen as necessary in order to take full advantage of the perceived educational and professional opportunities afforded to them. Similarly, the sample for the current analysis was composed mainly of well educated, high income women, indicating middle and upper class attributes. Despite their social privilege, these women may provide an interesting case study in "positive deviance"—that is, they use contraception in desirable ways, including protection against both pregnancy and STIs/HIV, and they report (relative) sexual satisfaction. This notion appends the ideas of Philpott and

colleagues, who suggest focusing on enhanced pleasure when promoting safer sex through dual use and dual protection (1, 2).

Finally, the current study augments literature on the effects of hormonal contraceptives on sexuality, much of which indicates that although these methods can enhance sexual spontaneity and enjoyment in many women, sexual interest may be reduced in a proportion of them (19, 55, 56). The current analyses focused on sexual *satisfaction* whereas previous studies have assessed effects of oral contraceptives on spontaneous sexual interest and sexual enjoyment. Admittedly, the cross sectional data presented here do not allow us to demonstrate why or how hormonal only users had the poorest overall sexual satisfaction scores, especially since we controlled for variables such as age and length of relationship. It is notable, however, that hormonal only users were significantly more likely to report that they were "dissatisfied" or "very dissatisfied" with their level of sexual interest than condom primarily users or dual users (not shown).

There are also limitations imposed by the use of an Internet-based convenience sample, which comprised a more socially privileged group using effective contraception more consistently than the U.S. population at large (46). The smaller sample size also precluded analysis of contraceptive methods individually. Thus, we were forced to exclude certain methods (such as the IUD) and combine women who used different methods into larger categories (such pill users and NuvaRing users). Perhaps a more notable limitation, however, is our inability to link the sexual attributes women gave to contraceptives with their actual contraceptives practices, let alone their risk of unwanted pregnancy and disease. That is, these cross sectional data did not enable us to demonstrate that women were less likely to use methods that detracted from their sexual pleasure. In fact, in an effort to reduce recall error, we captured women's reports of detraction only *from the method(s) they had used in the last four weeks;*

it may be that many women had already discontinued the methods that most detracted from their sexual pleasure.

However, our intention here is not to make definitive claims about the relationship between contraception, sexual enjoyment, use patterns, and sexual risk. Rather, we wanted to conduct a multi-method analysis of some of the sexual dimensions of contraceptives, a heretofore understudied topic. We also wanted to add to the literature on women's sexual experience with male condoms, which has been sparse. For these purposes, this Internet sample served us well despite its limitations.

Indeed, we hope that this modest analysis serves as one of the first of many studies that will further refine our understandings of contraceptive use and women's sexuality. We have suggested that "sexual enjoyment" consists of multiple facets, only two of which are captured here. "Decreased pleasure" refers to a more immediate, temporal phenomenon that occurs in the sensation of the sexual moment; "overall sexual satisfaction" can transcend the sexual moment to include relationship dynamics, partner attention and skill, sexual self esteem, and other phenomena. However, both are central to women's overall sexual well being, and both seem to be affected by contraception. We urge family planning, STI, and HIV researchers to include sexuality questions on their surveys or in their interviews, ideally in relation to one contraceptive method at a time. We also emphatically encourage longitudinal studies of these topics, which will enable us to draw clearer links between sexual attributes, use patterns, and experience of unintended pregnancy and STI/HIV transmission. The sexual dimensions of contraceptives matter to women and their contraceptive practices. We hope our field will promote women's reproductive well being by recognizing the importance of their sexual well being.

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Table 1
Demographic Characteristics of the Sample (N=258)

	%	N
Contraceptive method in last 4 weeks		
hormonal only users	31.0	80
condom primarily users*	25.2	65
dual method users£	20.5	53
other usersμ	23.2	60
Relationship length		
<6 months	18.6	48
6-12 months	11.6	30
1-2 years	10.1	26
2 or more years	50.6	131
missing	8.9	23
Age (mean, standard deviation)	25.5	6.59
Marital status		
single (never married)	50.8	131
married	21.7	56
living with partner	20.9	54
separated/divorced	4.7	12
missing	1.9	5
Number of children in household		
0	58.9	152
1 or more	22.9	59
missing	18.2	47
Education		
high school or less	17.1	44
some college	35.7	92
college or post grad	46.1	119
missing	1.2	3
Household income		
20,000 or less	19.0	49
20,001 to 40,000	23.6	61
40,001 to 75,000	31.0	80
75,001 or greater	23.6	61
missing	2.7	7
STI history		
no reported STI	36.4	164
at least lifetime STI	63.6	94
missing	0.0	0
Number of current partners		
1 partner	86.0	222
more than 1 partner	13.2	34
missing	0.8	2
Employment status		
employed full time	38.8	100
employed part time	21.3	55
full time student	32.6	84
other (homemaker, unemployed)	6.6	17
missing	0.8	2
Total	100.0	258

* Use of male condoms either with or without withdrawal, spermicide, and/or outercourse

£ Use of a hormonal method and male condoms, either with or without withdrawal, spermicide, and/or outercourse

μ Use of the diaphragm, IUD, natural family planning, emergency contraception, or withdrawal, spermicide, or outercourse not in conjunction with condoms

Table 2
Demographic Characteristics by Contraceptive Method (N=258)

	hormonal only users (N=80)		condom primarily users* (N=65)		dual users£ (N=53)		other usersμ (N=60)		χ2 or F (as appropriate)	sig. (from χ2 or F as appropriate)
	%	n	%	n	%	n	%	n		
Effect of contraception on sexual pleasure									14.55	0.002 **
decreased enjoyment due to method	4.3	3	23.8	15	24.0	12	28.3	15		
neutral/increased enjoyment due to method	95.7	67	76.2	48	76.0	38	71.7	38		
Sexual satisfaction score (mean, SD)	-0.234	1.061	-0.006	0.913	0.420	0.644	-0.1	1	5.147	0.002 **
Relationship length									20.26	0.016 *
<6 months	13.5	10	21.3	13	36.0	8	14.0	7		
6-12 months	10.8	8	14.8	9	8.0	4	18.0	9		
1-2 years	17.6	13	3.3	2	14.0	7	8.0	4		
2 or more years	58.1	43	60.7	37	42.0	21	60.0	30		
Age (mean, standard deviation)	25.4	5.908	25.3	6.367	22.29	4.789	28.6	8	9.479	0.000 **
Marital status									24.68	0.003 **
single (never married)	44.3	35	54.0	34	78.4	40	36.7	22		
married	26.6	21	22.2	14	5.9	3	30.0	18		
living with partner	25.3	20	20.6	13	9.8	5	26.7	16		
separated/divorced	3.8	3	3.2	2	5.9	3	6.7	14		
# children in household									12.21	0.007 **
0	74.6	53	69.2	36	88.4	38	55.6	25		
1 or more	25.4	18	30.8	16	11.6	5	44.4	20		
Education									8.53	0.202
high school or less	18.8	15	15.9	10	21.2	11	13.3	8		
some college	30.0	24	38.1	24	48.1	25	31.7	19		
college or post grad	51.3	41	46.0	29	30.8	16	55.0	33		
Household income									2.98	0.965
20,000 or less	22.1	17	21.9	14	19.2	10	13.8	8		
20,001 to 40,000	23.4	18	21.9	14	26.9	14	25.9	15		
40,001 to 75,000	28.6	22	31.3	20	30.8	16	37.9	22		
75,001 or greater	26.0	20	25.0	16	23.1	12	22.4	13		
STI history									4.23	0.238
no reported STI	43.8	35	27.7	18	66.0	35	38.3	23		
at least lifetime STI	56.3	45	72.3	47	34.0	18	61.7	37		
Number of current partners									3.07	0.382
1 partner	91.3	88	87.7	57	84.3	43	81.7	49		
more than 1 partner	8.8	12	12.3	8	15.7	8	18.3	11		
Employment status									17.25	0.045 *
employed full time	45.6	36	40.6	26	22.6	12	43.3	26		
employed part time	15.2	12	20.3	13	35.8	19	18.3	11		
full time students	32.9	26	32.8	21	39.6	21	26.7	16		
other (homemakers, unemployed)	6.3	5	6.3	4	1.9	1	11.7	7		

* Use of male condoms either with or without withdrawal, spermicide, and/or outercourse

£ Use of a hormonal method and male condoms, either with or without withdrawal, spermicide, and/or outercourse

μ Use of the diaphragm, IUD, natural family planning, emergency contraception, or withdrawal, spermicide, or outercourse not in conjunction with condoms

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

Table 3

Logistic Regression with Decreased Sexual Pleasure as Outcome

				Unadjusted Estimates		Adjusted Estimates	
Predictor	decreased enjoyment due to method (%(N))	neutral/ increased enjoyment due to method (%(N))	sig. (χ2 or T)	Exp(β) Odds Ratio (95% CI)	P	Exp(β) Odds Ratio (95% CI)	P
Contraceptive use in past 4 weeks			0.002 ***				
hormonal only users	4.3% (3)	95.7% (67)		ref		ref	
condom primarily users*	23.8% (15)	76.2% (48)		5.84 (1.57, 21.69)	0.008 **	6.15 (1.56, 24.15)	0.009 **
dual method users£	24.0% (15)	76.0% (38)		6.32 (1.65, 24.14)	0.007 *	7.08 (1.79, 28.63)	0.006 **
Relationship length			0.198				
<6 months	15.9 (7)	84.1 (37)				ref	
6-12 months	17.2 (5)	82.8 (24)				1.70 (.377, 7.71)	0.489
1-2 years	20.8 (5)	79.2 (19)				2.30 (.494, 10.67)	0.289
2 years or more	19.3 (23)	80.7 (96)				.944 (.299, 2.98)	0.923
Age			0.000 **			1.03 (.948, 1.12)	0.489
STI history			0.015 *				
at least lifetime STI	10.7% (9)	89.3% (75)				ref	
no reported STI	23.7% (36)	76.3 (116)				.395 (.133, 1.18)	0.095
Model Chi-square				11.48	0.003 **	16.52	0.021 *

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£ Use of a hormonal method and male condoms, either with or without withdrawal, spermicide, and/or outercourse

*p<.05; **p<.01

Table 4
Linear Regression with Sexual Satisfaction Score as Outcome

Predictor	Mean sexual satisfaction score (SD)	F	sig.	Model 1 (Unadjusted)			Model 2 (Adjusted)		
				Unstandardized Coefficient (95% CI)	t	P	Unstandardized Coefficient (95% CI)	t	P
Contraceptive use in past 4 weeks		7.83	0.00 **						
hormonal only users	-0.234 (1.06)			ref			ref		
condom primarily users*	-0.0058 (.913)			.257 (-.059, .573)	1.606	0.110	.116 (-.211, .442)	0.70	0.485
dual method users£	0.420 (.644)			.510 (.091, .928)	2.40	0.017 *	.388 (.025, .750)	2.11	0.036 *
Relationship length		4.78	0.00 **						
<6 months	.362 (.770)						ref		
6-12 months	.251 (.896)						-.001 (-.480, 4.77)	-0.01	0.995
1-2 years	.181 (.906)						-.094 (-.600, .412)	-0.37	0.715
2 years or more	-.173 (.975)						-.301 (-.705, .103)	-1.47	0.144
Age		1.31	0.16				.003 (-.022, .029)	0.26	0.794
Marital status		6.34	0.00 **						
single (never married)	.1649 (.85399)						ref		
married	-.4751 (1.053)						-.637 (-1.09, -.181)	-2.76	0.006 **
living with partner	-.0044 (.9448)						.061 (-.326, .448)	0.31	0.756
separated/divorced	.3059 (.9524)						-.008 (-.589, .604)	0.03	0.980
Number of children in household		0.00	0.96						
zero	-.0276 (.97568)						ref		
1 or more	-.0353 (.95129)						.417 (.046, .787)	2.22	0.028 *
STI history		3.50	0.06						
at least one lifetime STI	-.1488 (1.0057)						ref		
no reported STI	.0862 (.9141)						.314 (.039, .558)	2.25	0.026 *
R2				0.041			.141		
Adjusted R2				0.031			1.64		
F				3.95		0.021 *	3.14		0.001 **

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£ Use of a hormonal method and male condoms, either with or without withdrawal, spermicide, and/or outercourse

*p<.05; **p<.01