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Change in Sexual Behavior With Provision of No-Cost Contraception

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Abstract

Objective—To estimate whether providing no-cost contraception is associated with the number of sexual partners and frequency of intercourse over time.

Methods—This was an analysis of the Contraceptive CHOICE Project, a prospective cohort study of 9,256 adolescents and women at risk for unintended pregnancy. Participants were provided reversible contraception of their choice at no cost and followed with telephone interviews at 6 and 12 months. We examined the number of male sexual partners and coital frequency reported during the previous 30 days at baseline compared to 6 and 12-month time points.

Results—From our total cohort, 7,751 (84%) women completed both 6 and 12-month surveys and were included in this analysis. We observed a statistically significant decrease in the fraction of women who reported more than one sexual partner during the past 30 days from baseline to 12 months (5.2% to 3.3%, $p<0.01$). Most women (70–71%) reported no change in their number of sexual partners at 6 and 12 months; whereas 13% reported a decrease and 16% reported an increase ($p<0.01$). Over 80% of participants who reported an increase in the number of partners experienced an increase from 0 to 1 partner. Frequency of intercourse increased during the past 30 days from baseline (median = 4) to 6 and 12 months (medians = 6; $p<0.01$). However, greater coital frequency did not result in greater sexually transmitted infection incidence at 12 months.

Conclusion—We found little evidence to support concerns of increased sexual risk-taking behavior subsequent to greater access to no-cost contraception.

INTRODUCTION

Research has shown that providing contraception at no cost and educating adolescents and women about the most effective contraceptive methods can decrease unintended pregnancy rates and abortion.(1, 2) These important findings from the Contraceptive CHOICE Project in St. Louis, Missouri were covered widely by the news media.(3–5) Leaders in Congress

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and the White House have stated that “broadening access to birth control will help reduce the number of unintended pregnancies and abortions.”(6)

Although the medical community acknowledges the benefits of increased access to effective contraception,(7–9) others in society are less enthusiastic. The Family Research Council, for example, has raised concerns that increased access to contraception may actually lead to an increase in the number of unintended pregnancies, presumably by increasing sexual activity. (5) An article in the *American Thinker* states, “The results are in: contraception availability does not reduce unintended pregnancies ... Studies have shown that contraception increases sexual activity – i.e., that more contraception means more sex.”(10)

The question of whether increased access to contraception changes sexual behavior in unanticipated ways is an important one. Reliance on data rather than intuition is advisable. The purpose of this report is to estimate whether provision of no-cost contraception is associated with a change in the number of sexual partners and frequency of intercourse over time among women enrolled in a large study of reversible contraception.

METHODS

This is a secondary analysis of data collected from women enrolled in the Contraceptive CHOICE Project. CHOICE is a prospective cohort study of 9,256 reproductive-aged adolescents and women that provides all forms of reversible contraception at no cost in an effort to reduce unintended pregnancy. A detailed description of the study has been previously published.(11) The cohort is a convenience sample recruited through provider referral, word of mouth, and study flyers.

Eligible women were: 1) residents of St. Louis or sought clinical services at a study recruitment location; 2) 14–45 years of age; 3) willing to start a new method of reversible contraception or not currently using a contraceptive method, 4) interested in avoiding pregnancy for at least one year; 5) sexually active with a male partner in the past 6 months or planning to have sex within the next 6 months; and 6) English or Spanish speaking. Participants were excluded if they had a hysterectomy or sterilization procedure. Participants were provided with structured contraceptive counseling at enrollment by a trained counselor who reviewed each method and its effectiveness, benefits, risks, and side effects.(12) Once approved by a clinician, participants were provided with their contraceptive method of choice. Participants were allowed to change methods during the study. During the baseline enrollment session participants responded to a staff-administered questionnaire and completed sexually transmitted infection (STI) screening. The questionnaire collected demographic information and reproductive and sexual histories. Women were followed for 2–3 years and completed telephone surveys at 3 and 6 months, and every 6 months thereafter for the duration of their participation. The study was approved by the Washington University Human Research Protection Office and written informed consent was obtained from study participants before enrollment.

In this analysis we examined two measures of sexual risk related to pregnancy and STI among reproductive-age women; number of sexual partners and frequency of intercourse.

Having multiple sexual partners, either concurrent or sequential during a specified period of time, is a known sexual risk behavior.(13–15) Transmission of sexually transmitted infections is dependent on both the number of sexual partners and sex acts per partner; increases in one or both enhances the likelihood of persistence of the infection in a community.(16)

We included participants who completed both 6-month and 12-month surveys. To compare the number of male sexual partners and coital frequency during a 30-day recall period assessed at baseline, 6 months, and 12 months, we used three questions: 1) during the past 30 days, how many men have you had vaginal sex with?; 2) during the past 30 days how many times did you have sex with your main (or steady) male partner?; and 3) among women who reported multiple partners during the past 30 days how many times did you have sex with your other male partner(s)?

Means, standard deviations, frequencies, and percentages were used to describe the characteristics of participants in the analysis and excluded samples. For the comparison of the excluded and analytic samples in Table 1, we used a chi-square test for categorical data and Student's t-test or Wilcoxon Mann Whitney test for continuous variables where appropriate. We present the distribution of male sexual partners during the last 30 days at baseline, 6, and 12 months. The change in number of partners during the past 30 days from baseline to 6 month and 12 months is shown as the percent of participants who reported a decrease, no change, or an increase in the number of male sexual partners. We focus on the difference between more than one sexual partner versus zero or one sexual partner, because participants in the study were seeking contraception and therefore would be expected to be sexually active, and because of the additional sexual risk that comes with multiple partners. We also present the distribution of coital frequency during the past 30 days and the change from baseline to 6 and 12 months as the percent of participants who reported a decrease, no change, or an increase. We stratified an increase in acts into 2 categories of 1–7 acts, or 8 or more acts from baseline to each survey time point. We used the cut-off of 7 acts based on the baseline mean number of acts during the past 30 days. Generalized estimating equations (GEE) were used to test for the trend over time in the percent of women who reported multiple partners. Because the number of partners and acts of intercourse were not normally distributed, the Wilcoxon signed-rank test was used to compare the change from baseline to 6 and 12-month time points. The Stuart-Maxwell test was used to test whether the distribution of change at 6 months was equivalent to the change observed at 12 months. All analyses were performed using Stata 11 (StataCorp, College Station, TX). A p-value less than 0.05 was considered statistically significant.

RESULTS

Of the 9,256 women enrolled in CHOICE, 7,751 (84%) completed their 6 and 12-month surveys and were included in this analysis. Eight percent at each time point did not complete their 6-month (n=777) or 12-month (n=728) surveys. Table 1 compares the baseline demographic and reproductive characteristics of the analysis sample to the women not included in the analysis. Although there was no difference in the mean number of partners during the past 30 days (p=0.11), women in the excluded group were more likely to be less

than 20 years of age, black, and reported less education, higher percentage of receipt of public assistance or public insurance, a greater number of unintended pregnancies and number of lifetime sexual partners, and test positive for a STI at baseline.

We observed a statistically significant decrease over time in the percent of women who reported multiple partners during the past 30 days. At baseline 5.2% reported more than one male sexual partner compared to 3.5% and 3.3% at 6 and 12 months, respectively ($p<0.01$). Table 2 presents the change in number of male sexual partners during the past 30 days over time. The median number of sexual partners was identical at all three time points (median = 1). Most women (70–71%) reported no change in the number of sexual partners at 6 and 12 months; whereas 13–14% reported a decrease and 16% reported an increase ($p<0.01$). Among the 16% of women who reported an increase in the number of partners, over 80% increased from no partners to 1 partner. The overall distribution of change in male partners during the past 30 days was similar at 6 months and 12 months ($p=0.11$).

We observed an increase in the frequency of sexual intercourse during the past 30 days from baseline to 6 and 12-month time points (<0.01) (Table 2). The median frequency increased from 4 episodes at baseline to 6 episodes at 6 and 12-months. Half of the study participants reported an increase in the frequency of sexual intercourse during the past 30 days from baseline to 6 and 12 months, with the other half reporting either no change or a decrease. In addition, the distribution of change in the frequency of intercourse reported at 6 months was different than that reported at 12 months ($p<0.01$). We compared the combined incidence rate of *Chlamydia trachomatis* and *Neisseria gonorrhoeae* infection at 12 months of follow-up between women who reported the same or fewer acts of intercourse to women who reported an increase and found similar rates in both groups (3.6 per 100 woman-years versus 4.2 per 100 woman-years respectively, $p=0.16$).

DISCUSSION

The percentage of women who reported multiple partners during the past 30 days declined modestly from baseline to both 6 and 12 months. The majority of women who reported an increase in partners were those who reported no partners during the past 30 days at baseline and subsequently reported only 1 partner at 6 or 12 months. This finding was not unexpected given our study inclusion criteria required current sexual activity with a male partner or intention to be sexually active in the next 6 months. Of note, 95% of participants that had zero partners during the past 30 days at baseline reported a history of sexual intercourse at enrollment. Among the 96 participants who reported never having had intercourse at enrollment, 52% reported no partners at 6 months and 46% reported no partners at 12 months. Prior research among nationally representative samples report that the majority of women (69%) have one male sexual partner in the past year; whereas 8% report 2 partners, 3% report 3 partners, and 3% report 4 or more partners.(17) Adimora and colleagues estimated that 8% of U.S. women reported concurrent sexual partners during the past 12 months and found concurrency was associated with several factors including younger age, black race, and younger age at first intercourse.(15) Teens (15–19 years) and younger women (20–24 years) are more likely to report more than one male sexual partner during the

past 12 months compared to women aged 25 and older (19%, 24%, and 9%, respectively). (17)

We observed an increase of 2 episodes of sexual intercourse from baseline to 6 and 12-month time points during the previous 30-day period. The clinical significance of this increase is unclear. However, we did not find a difference in the STI incidence rate at 12 months between women who reported the same or fewer acts of intercourse to women who reported an increase. In addition, the overall average coital frequency reported during the past month among women enrolled in the CHOICE Project (8.6 acts) was comparable to that reported among a 2002 national probability sample of sexually experienced women aged 25–45 years (6.4 acts).⁽¹⁸⁾ The 2002 national sample has a higher mean age, and age is inversely related to sexual activity; thus the higher mean coital frequency in our sample is expected.

A major strength of our study was the use of a large cohort of sexually active women of reproductive age, including over 4,000 young women aged 14–24 years who are at increased risk of STI and unintended pregnancy. We examined two measures of sexual risk at multiple points subsequent to access to no-cost contraception. Our study did not obtain detailed information on the start and end times of each relationship reported during the surveys; therefore, we are unable to examine the length of overlap or time between multiple partners. Such an analysis would be important to fully understand the risk of STI transmission.⁽¹⁴⁾ Our findings are susceptible to recall bias in the number of partners reported at 6 and 12 months and hesitancy among participants to disclose multiple partners for fear of judgment, especially among young women and adolescents.⁽¹⁹⁾ Although the excluded group may be at higher risk for STIs and unintended pregnancy than the analytic sample which may underestimate the behavior change found in our analysis sample, the remaining 84% of the total cohort that were included in the analysis were also at high risk. Furthermore, participants in our analytic sample were younger, more likely to be African American, unmarried, have a younger age of sexual debut, and more likely to have experienced an unintended pregnancy than women surveyed in the National Survey of Family Growth.^(17, 18) Although the generalizability of our data may be a limitation, we believe our findings apply to women at greatest risk for STIs and unintended pregnancy.

We have shown previously in this cohort that provision of no-cost contraception results in greater use of the most effective contraceptive methods (intrauterine device and implant)⁽²⁾ which results in fewer unintended pregnancies including teen births and abortions.⁽¹⁾ Overall, we found little evidence to support concerns of increased sexual risk-taking behavior subsequent to greater access to no-cost, highly-effective contraception.

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Table 1

Comparison of Baseline Characteristics Among Analysis and Excluded Samples

Characteristic	Analysis Sample (n=7,751)	Excluded Sample (n=1,505)	P
	n (%)	n (%)	
Age (years)			
14–19	1118 (14)	286 (19)	<0.01
20–24	2949 (38)	587 (39)	
25–29	2061 (27)	378 (25)	
30–34	934 (12)	166 (11)	
35–45	689 (9)	88 (6)	
Race (missing = 1)			<0.01
Black	3805 (49)	865 (58)	
White	3339 (43)	531 (35)	
Other	606 (8)	109 (7)	
Hispanic ethnicity	382 (5)	93 (6)	0.04
Education (missing = 3)			<0.01
High school or less	2488 (32)	717 (48)	
Some college	3285 (42)	617 (41)	
College or graduate degree	1975 (26)	171 (11)	
Marital status (missing = 6)			<0.01
Never married	4699 (61)	907 (60)	
Living with partner	1569 (20)	352 (23)	
Married	988 (13)	133 (9)	
Divorced or widowed or separated	489 (6)	113 (8)	
Insurance (missing = 62)			<0.01
None	3097 (40)	685 (46)	
Public	1091 (14)	364 (24)	
Private	3508 (46)	449 (30)	
Trouble paying for basic needs (missing = 14)	2995 (39)	644 (43)	<0.01
Receives public assistance (missing = 6)	2722 (35)	720 (48)	<0.01
Parity			<0.01
0	3795 (49)	574 (38)	
1	1871 (24)	408 (27)	
2	1314 (17)	292 (20)	
3 or more	771 (10)	231 (15)	
Unintended pregnancies (missing = 20)			<0.01
0	2971 (38)	430 (29)	
1	2072 (27)	420 (28)	
2	1274 (17)	277 (18)	
3 or more	1418 (18)	378 (25)	
History of abortion	3142 (41)	689 (46)	<0.01

Characteristic	Analysis Sample (n=7,751)		P
	n (%)	n (%)	
Age at first intercourse (missing = 116)			<0.01
Younger than 16	2680 (35)	589 (40)	
16–17	2892 (38)	596 (40)	
18–19	1425 (19)	231 (15)	
20 or older	653 (8)	74 (5)	
No. of lifetime male sexual partners (mean, SD) (missing = 114)	8.7 (11.0)	8.2 (10.6)	0.02
No. of male sexual partners in last 30 days (mean, SD) (missing = 116)	0.9 (0.6)	0.9 (0.7)	0.11
Tested positive for <i>Chlamydia trachomatis</i> , <i>Neisseria gonorrhoeae</i> or <i>Trichomonis vaginalis</i> at enrollment (missing 484 who did not consent to testing)	543 (7)	139 (10)	<0.01
Baseline chosen method (missing = 4)			<0.01
Long-acting reversible contraception	5754 (74)	1174 (78)	
Depomedroxyprogesterone acetate	516 (7)	122 (8)	
Oral contraceptive pill, patch, or ring	1477 (19)	209 (14)	

SD, standard deviation.

Table 2
Change in Number of Sexual Partners and Intercourse Frequency From Baseline to Selected Time Points

	P-Values for Comparisons				Test of Trend and Comparison of Distributions
	Baseline	6-Months	12-Months	Change From Baseline to 6-Months	Change From Baseline to 12-Months
<i>Reported multiple partners during past 30 days</i>	5.2%	3.5%	3.3%		<0.01*
<i>Number of male sexual partners during past 30 days</i>					
Mean (SD)	0.86 (0.57)	0.87 (0.46)	0.87 (0.46)		
Median	1	1	1		
Minimum	0	0	0		
Maximum	15	8	7		
Change from baseline to follow-up survey				<0.01 [†]	<0.01 [†]
Fewer partners		13.2%	13.9%		
Same number of partners		70.9%	69.7%		
Increase from 0 to 1 partner		13.1%	13.4%		
Any other increase in partners [§]		2.5%	2.6%		
<i>Frequency of sexual intercourse in past 30 days</i>					
Mean (SD)	7.03 (9.15)	8.74 (9.64)	8.63 (9.36)		
Median	4	6	6		
Minimum	0	0	0		
Maximum	100	150	100		
Change from baseline to follow-up survey				<0.01 [†]	<0.01 [†]
Fewer acts		32.9%	34.2%		
Same number of acts		15.8%	14.2%		
Increase of 1–7 acts		31.9%	30.4%		
Increase of 8 or more acts		18.5%	20.0%		

SD, standard deviation.

* Generalized estimating equations for test of trend over time.

[†] Wilcoxon signed-rank test used to compare the change from baseline to 6 and 12-month time points.

[§] Stuart-Maxwell test used to compare the distribution of change between baseline and 6 months to between baseline and 12 months.

§ Any other increase represents 0 to 2, 1 to >1, 2 to >2, 3 to >3, etc.