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## How Relationships of U.S. Men Affect Contraceptive Use and Efforts to Prevent Sexually Transmitted Diseases

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**Context:** Comparatively little is known about how U.S. adult men's attitudes and characteristics influence their decision to use contraceptives to prevent pregnancy and to take actions to protect themselves from infection with sexually transmitted diseases (STDs).

**Methods:** Attitudinal and background data on 1,595 men from the 1991 and 1993 waves of the National Survey of Men (NSM) were used, through logistic regression techniques, to predict the likelihood of current contraceptive use to prevent pregnancy and recent efforts to avoid STD infection among men in three types of sexual relationships—marriage, cohabitation and dating.

**Results:** At the 1993 interview, 58% of men were using contraceptives to prevent pregnancy and 22% had recently taken actions to protect themselves from STDs. Men's concern about how easy a method was to use reduced the likelihood of STD protection, but had no influence on contraceptive use to prevent pregnancy; however, concerns about a method's risks to the female partner increased the likelihood of both outcomes. Couples in which the man expected his partner to take primary responsibility for contraception were 40% as likely to be protecting themselves against STDs as were couples in which the man believed he shared or had greater responsibility. Married men were the least likely to be protecting themselves against STDs, whereas men who were dating were the most likely to do so.

**Conclusions:** Men's attitudes and characteristics were important predictors of contraceptive use to prevent pregnancy and of efforts to protect against STDs, even after controls for the female partner's characteristics were entered in the analysis. The findings emphasize the need to include men in interventions aimed at reducing unintended pregnancy and STD transmission.

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Both the incidence of unintended pregnancy and the prevalence of sexually transmitted diseases (STDs) have increased since the 1980s.<sup>1</sup> Choosing a contraceptive has grown more complex, given that individuals and couples must consider the risks of both unintended pregnancy and STD transmission.<sup>2</sup> To date, no single method provides maximum protection against both, so individuals must weigh risks of both conception and STD transmission when making a choice. Brown and Eisenberg argued that individuals' different priorities in preventing pregnancy and disease are likely to

vary over time and across relationships.<sup>3</sup>

Several studies have found that both men and women influence the decision on whether to use contraceptives,<sup>4</sup> yet most fertility studies are based solely on the responses of women—thus telling just half of the story. Given the increasing rates of nonmarital fertility and of STD transmission, men's attitudes and sexual practices are currently receiving greater attention.<sup>5</sup> To date, however, most data on men and fertility are derived from studies of male adolescents.<sup>6</sup> To address this gap, we examined the effects of attitudes and background characteristics on contraceptive use for pregnancy prevention and on efforts to avoid STDs among a sample of married, dating and cohabiting men.

## BACKGROUND

Past research has indicated that the types of sexual relationships men form influence their contraceptive behavior. Men who are cohabiting are more likely than those who are not to use contraceptives and to hold an egalitarian view of contraceptive responsibility; moreover, couples who are cohabiting have a higher risk of pregnancy because they have intercourse more frequently.<sup>7</sup> In contrast, noncohabiting single men perceive themselves to be the dominant partner in contraceptive decision-making.<sup>8</sup>

Discussion between partners about contraception has also been linked to their commitment to one another. Men in long-term, stable relationships with strong emotional ties to their partner are more likely than those in casual relationships to discuss, support and practice contraception.<sup>9</sup> In addition, men who feel they should share responsibility for contraception are more likely to use contraceptives than are men who consider it to be their partner's responsibility.<sup>10</sup> Other research suggests that the more casual the relationship, the more likely men are to choose condoms as their method, particularly to protect themselves against STDs.<sup>11</sup>

Additional factors influencing contraceptive choice include perception of potential side effects, whether a method interrupts sexual intimacy and its cost.<sup>12</sup> Further, men's contraceptive attitudes and use vary by race. Black men are more likely than white men to view contraception as the woman's responsibility.<sup>13</sup> And while condom use is higher among black men than among white men,<sup>14</sup> blacks are less likely to choose sterilization; among blacks who do, generally the female partner undergoes the procedure.<sup>15</sup>

Behavioral factors can also influence contraceptive use or nonuse, since some activities—namely, heavy alcohol consumption, smoking and drug use—are in turn associated with risky sexual behavior, such as multiple sexual partners and unprotected intercourse.<sup>16</sup>

Socioeconomic factors such as education, religion, peer influence and age have also been shown to affect men's decisions to practice contraception.<sup>17</sup> For example, researchers found a negative relationship between condom use and men's age;<sup>18</sup> this association has been attributed to the fact that relationship stability increases with time, and that use also shifts from STD protection to pregnancy prevention with time.<sup>19</sup> Other research suggests that men of lower socioeconomic status are more likely to view pregnancy as enhancing their masculinity, while men of higher

socioeconomic status are more likely to seek to avoid paternity because it interferes with work, education and leisure opportunities.<sup>20</sup>

To examine these issues, we estimated the effects of men's attitudes and characteristics, as well as their partners' characteristics, on contraceptive use and STD protection in three relationship scenarios—ones in which men are married, cohabiting and dating. Our two outcomes are current contraceptive use to prevent pregnancy and recent efforts to prevent STDs. Although most STD prevention efforts consist of condom use, we do not limit our analysis of such efforts to condom use only, since we are interested in any actions couples take to avoid infection.

## DATA AND METHODS

### Data

The data used to study contraceptive and sexual behavior come from the 1991 and 1993 waves of the National Survey of Men (NSM). The primary aim of the NSM, which was funded by a grant from the National Institute of Child Health and Human Development, was to examine issues related to sexual behavior and condom use among men aged 20-39. The Institute for Survey Research at Temple University in Philadelphia collected and processed the survey under the direction of scientists at Battelle in Seattle. Interviews were conducted in person in 1991, and follow-up information was obtained through a phone survey in 1993.

The male respondents provided extensive information on their sexual partners (both marital and nonmarital), sexual activity and fertility-related behaviors. The 1991 questionnaire solicited detailed information on contraceptive attitudes, background characteristics and risk behaviors. The 1993 phone survey collected information on current contraceptive use to prevent pregnancy and recent efforts to prevent STDs. (This question on recent STD prevention actions was not included in the 1991 wave.)

The NSM was based on a multistage, stratified, clustered, disproportionate-area probability sample of households in the contiguous United States. Black men were oversampled to ensure their adequate representation in the analysis. The 1991 sample, which had a 70% response rate, included 3,321 men aged 20-39 at the time of the interview. The sample was weighted by population to account for the effects of stratification, clustering and disproportionate sampling, as well as for the effects of differential nonresponse, to allow generalization to the U.S. population of men aged 20-39. A detailed description of the survey design and methodology is reported elsewhere.<sup>21</sup>

The second wave of the NSM, conducted in 1993, consisted of 2,001 phone interviews. These data were also weighted for the effects of differential nonresponse. Of these men, 1,601 were in a sexual relationship with a woman at the date of the phone call (1,155 were married, 130 were cohabiting and 316 were dating). After we excluded six men who did not provide data on pregnancy prevention, the sample consisted of 1,595 men.

In examining current method use to prevent pregnancy, we excluded 219 couples who would not need contraception (159 who were currently trying to have a baby, 30 who were currently pregnant, 25 who were not engaging in vaginal intercourse and five who

were noncontraceptively sterile). Thus, the final sample size for the dependent variable of current use to prevent pregnancy was 1,376 men who were in a sexual relationship in 1993.

For the other dependent variable of protection against STDs, eight men who were missing data on this measure were excluded from the sample of 1,595. Thus, the final sample size for the second outcome studied was 1,587 men.

## **ANALYTIC APPROACHES**

The first contraceptive outcome that we examined—current contraceptive use to prevent pregnancy, including male and female sterilization—is a dichotomous variable coded as one if the couple was using a method to prevent pregnancy at the date of the 1993 interview. The second dependent variable—whether the couple did anything to protect themselves from STD infection in the four weeks before the 1993 interview—is also a dichotomous measure, coded as one if the couple had done so.

The independent variables included the respondents' attitudes regarding contraceptive choice and responsibility and their background characteristics. Respondents were asked to rate on a five-point scale the importance of various elements in choosing a contraceptive method, from one (not at all important) to five (very important). We grouped the rated attitudinal items using principal components analysis, and by averaging the individual responses, combined them into three measures.

The first of these variables, the importance of ease of use in selecting a contraceptive, incorporated responses to five items—how easy the method is to obtain, how much it costs, how much it interferes with sexual pleasure, how easy it is to actually use and how much advance planning is needed. The importance of STD protection in choosing a method measured men's perceptions of its effectiveness at preventing STDs (including AIDS) for themselves and for their partner. The third variable assessed how important the partner's feelings and risks to her health (including pregnancy) were in choosing a method.

We also used principal components analysis to assess fertility intentions by averaging responses on a five-point scale to three items. Respondents were asked the extent to which they agreed (with one representing strong disagreement and five representing strong agreement) with the following statements: "If my partner told me she was pregnant, I would be happy;" "I would like to have a child some time in the next year or two;" and "I want to have (more) children." Another attitudinal variable, based on the same five-point scale, measured the extent of agreement with the following statement on responsibility for fertility: "Men have the same responsibilities as women for the children they father."

For the item measuring opinions on responsibility for contraceptive use, respondents were asked to rate on the five-point scale how they reacted to two statements: It is a woman's responsibility to make decisions about birth control, and it is a man's responsibility to do so. We then set up dichotomous variables, one indicating the belief that contraception is more a man's responsibility and one indicating that it is more a woman's responsibility, if there was a higher degree of agreement that one partner was more responsible for contraception. If the level of agreement on the two items was the same, a third dichotomous measure was created indicating equal responsibility for

contraception;<sup>22</sup> the belief that men have greater responsibility was the omitted category.

Most of the respondents' background characteristics were collected in 1991, although age data refer to 1993, since the partners' age data had to correspond to 1993—because some men had changed partners between the surveys. Thus, these background factors included age, race (white, black and other, with white being the reference category), education (less than high school, completed high school and more than high school, with high school only being the reference category) and religion (Protestant, Catholic, other and none, with Catholic as the reference category).

Respondents also indicated their participation in the following six general high-risk behaviors: ever having had a one-night stand; currently smoking; currently drinking alcohol at least a few times a week; ever having used street drugs; driving over the speed limit at least half of the time; and not wearing a seat belt at least half of the time. We created risk scores by summing the total number of behaviors the respondent participated in; thus, responses could range from zero to six. Three measures of sexual exposure were also included—age at first intercourse; a dichotomous variable indicating contraceptive use at first intercourse; and the number of women the respondent had had vaginal intercourse with since the 1991 interview.

The men provided the data on their partner's characteristics; for respondents who were in a dating relationship, "partner" refers to the current partner whom they considered most significant or important to them. The female partner's characteristics—which correspond to 1991 if the respondent had not changed partners between the surveys and to 1993 if he had—included religion, education and age, and were coded in the same way as the respondent's characteristics. Because the respondents' and their partners' race are highly correlated, only the respondent's race is included in the analyses.

Couple characteristics included the type of union at the time of the 1993 interview, indicated by three dummy variables—marital union, cohabiting relationship or dating relationship. We also controlled for the length of the relationship in months. In the analysis predicting STD prevention, we included a control variable indicating whether the couple was currently trying to conceive; however, couples trying to conceive were excluded from the analysis of method use to prevent pregnancy.

In the initial analyses, we used mean substitution to address missing continuous variables and created dummy variables to address any missing data on the categorical measures. Only one of these missing variables was significant in each of the models; thus, to simplify the analysis, all nonsignificant variables indicating missing data are excluded.

## **ESTIMATION TECHNIQUES**

We analyzed the data using logistic regression techniques to predict the likelihood of each of the two outcomes—contraceptive use to prevent pregnancy or actions to prevent STDs. The resulting coefficients represent the increase or decrease in the log odds of using contraceptives or taking actions to prevent STDs versus not doing so that were created by a unit or category change in an independent variable.<sup>23</sup> For ease of interpretation, we converted the coefficients into odds, by exponentiating the

## RESULTS

### Descriptive Analysis

The majority of the respondents were aged 30-40 in 1993 and were white, college-educated and Protestant (Table 1). Although these men's partners were somewhat younger, they shared similar characteristics. Most of the men surveyed were married (70%), about 10% were cohabiting and another 20% were in dating relationships.

**Table 1. Weighted percentage distribution of U.S. men aged 20-39, percentage of men using contraceptives to prevent pregnancy and of men doing something to prevent STDs, by attitudes or characteristics of respondent, partner and couple, National Survey of Men, 1991 and 1993**

Attitude or characteristic	Weighted % distribution (N=1,595)	% using method to prevent pregnancy (N=1,376)	% doing something to prevent STDs (N=1,587)
<b>Total</b>	<b>100.0</b>	<b>65.1</b>	<b>21.9</b>
<b>RESPONDENT'S CHARACTERISTICS</b>			
<b>Importance of ease of use in contraceptive choice</b>			
Not at all	5.8	62.1	25.8
Slightly	17.6	64.7	23.5
Moderately	40.1	67.5	23.3
Quite	30.5	66.7	19.4
Very	6.1	54.4	19.4
<b>Importance of protection from STDs in contraceptive choice</b>			
Not at all	10.7	69.3	12.4
Slightly	4.4	84.1	23.9
Moderately	6.4	79.5	19.4
Quite	7.9	72.9	15.7
Very	70.6	61.8	24.3
<b>Importance of concerns about partner in contraceptive choice</b>			
Not at all	1.8	50.0	13.8
Slightly	0.7	40.0	0.0
Moderately	8.6	53.3	14.1
Quite	44.1	66.4	19.8
Very	44.9	68.2	26.3
<b>Wants more children</b>			
Strongly disagree	17.3	65.9	12.0
Moderately disagree	20.4	66.6	29.5
Neutral	22.5	68.8	27.1
Moderately agree	19.6	63.2	27.1
Strongly agree	20.2	59.6	12.3
<b>Men and women share equal responsibility for children</b>			
Strongly disagree	1.0	41.7	11.8
Moderately disagree	1.0	93.8	12.5
Neutral	1.7	84.0	3.6
Moderately agree	8.4	67.5	22.1
Strongly agree	87.9	64.5	22.5

**Views on couple's responsibility for contraception**

Woman more responsible	6.2	64.8	11.0
Both responsible	78.1	65.4	22.2
Man more responsible	15.8	63.5	24.2

**No. of risky behaviors**

0-1	19.2	69.4	28.9
2-3	47.1	64.5	23.7
4-6	33.7	63.4	15.2

**No. of sex partners since 1991 interview**

1	84.3	66.0	17.8
2	6.5	62.6	36.9
>=3	9.2	58.7	40.7

**Age at first intercourse**

<14	19.8	55.4	18.1
15-16	27.6	63.2	23.6
17-18	29.8	70.4	21.8
>=19	22.8	68.9	23.4

**Used contraceptive at first intercourse**

Yes	40.6	69.7	29.2
No	59.4	62.1	16.5

**Age at 1993 survey**

20-24	11.5	69.0	44.9
25-29	18.4	65.7	23.7
30-34	27.8	70.0	18.4
>=35	42.3	61.0	17.1

**Race**

White	81.8	66.3	20.4
Black	9.1	59.8	31.1
Other	9.0	59.2	25.7

**Education**

<high school	7.1	47.0	12.1
High school	35.4	64.3	19.3
>high school	57.4	67.8	24.6

**Religion**

Protestant	49.8	65.5	21.0
Catholic	32.3	61.3	23.4
Other	5.8	66.7	20.7
None	12.1	72.3	21.8

**PARTNER'S CHARACTERISTICS****Age at 1993 survey**

<24	18.4	67.4	41.1
25-29	22.0	72.0	25.0
30-34	25.9	65.3	13.2
>=35	33.7	59.7	15.9

**Education**

<high school	7.6	56.6	12.9
High school	38.4	58.1	20.4

>high school	54.0	71.9	24.1
<b>Religion</b>			
Protestant	52.0	66.4	20.0
Catholic	35.8	60.9	23.0
Other	4.6	75.4	23.9
None	7.6	73.6	24.8
<b>COUPLE CHARACTERISTICS</b>			
<b>Type of relationship</b>			
Marriage	69.6	65.0	14.6
Cohabitation	10.3	66.2	22.5
Dating	20.1	64.7	46.5
<b>Duration of relationship (in yrs.)</b>			
¼1	23.7	64.8	31.6
2-5	31.3	66.5	23.5
6-9	16.0	70.2	19.5
>=10	29.0	63.0	13.8
<b>Currently trying to conceive</b>			
Yes	9.5	na	5.3
No	90.5	na	23.6
<b>At risk of pregnancy</b>			
Yes	96.7	na	na
No	3.3	na	na
<b>Currently using contraceptive to prevent pregnancy</b>			
Yes	58.2	na	na
No	41.8	na	na
<b>Did something in past 4 weeks to prevent STDs</b>			
Yes	21.9	na	na
No	78.1	na	na
<i>Notes: For characteristics of male respondents, all data were collected in 1991 except number of partners since 1991 and age. For characteristics of female partners, data on education and religion were collected in 1991 if respondent had not changed partners and in 1993 if he had. For couple characteristics, all data were collected in 1993. For the percentage distribution column, data were missing on some variables. na=not applicable.</i>			

More than one-third (37%) indicated that ease in acquiring and using a method was quite or very important to their choice of contraception, while 40% said that it was only moderately important. A method's ability to protect against STDs was quite or very important to most men (79%), as was a method's potential risks—i.e., of unintended pregnancy or of side effects—to their partner (89%).

About 40% of the sample agreed (moderately or strongly) that they wanted more children, 37% disagreed and 23% were neutral. Most respondents (88%) strongly agreed with the statement that men have the same responsibility as women for the children they father, and a slightly smaller majority (78%) gave equal weight to men and women in responsibility for birth control. Approximately 16%, however, indicated that men have more responsibility than women for contraception, and another 6% affirmed that women are more responsible than men.

About one-third of respondents had participated in 4-6 risk behaviors. The majority (84%) reported having had only one sexual partner since 1991. Nearly half (47%) had



become sexually active by age 16, and only about 40% had used a contraceptive method at first intercourse.

At their 1993 interview, 58% of all respondents reported that they and their partner were practicing contraception to prevent pregnancy. Almost 22% indicated that they had done something to protect themselves from an STD in the past four weeks (17% had used condoms and 5% had taken other actions). Among all men who did something to avoid STDs, the majority (79%) indicated condom use, 17% said they practiced sexual monogamy and 4% said their partner douched, used spermicides or took other actions. The proportions who specified condom use ranged from 64% among the married men to 85% of the cohabiting men and to 95% of the dating men (not shown). (Additional data on actions to prevent STDs are available from the first author.) About 15% of the total sample said they were both practicing contraception to prevent pregnancy and taking actions to protect themselves against STDs.

About 10% of couples were trying to conceive at the date of the 1993 interview. Once we limited the sample to couples who were at risk of unintended pregnancy, 65% of this reduced sample of 1,376 men were practicing contraception for pregnancy prevention. The men who were most concerned about a method's ease of use were less likely than others to be using one to prevent pregnancy (54% vs. 62-68%); similarly, such men were the least likely to have done something to protect themselves from STDs (19%). The more importance men placed on a method's ability to protect against STDs, the less likely they were to be using contraceptives to prevent pregnancy. There was no clear effect of this variable on actions taken to prevent STDs, however. The importance of concerns for one's partner in choosing contraception—which includes both concerns about unintended pregnancy and side effects—increased the likelihood of both contraceptive use to prevent pregnancy and actions to prevent STD transmission.

The desire for more children, in general, reduced the likelihood of both outcomes in the descriptive analysis, although the pattern for STD prevention was somewhat mixed. Contraceptive use for pregnancy prevention generally declined with increasing agreement that men and women share equal responsibility for the children they conceive; however, it was lowest among men who strongly disagreed with that statement. No clear pattern emerged in the proportions who protected themselves from STDs according to perceptions of responsibility for children.

While perceptions regarding which partner is more responsible for contraception had no effect on use to prevent pregnancy, men who felt it was primarily their responsibility or a shared one were more likely to be protecting themselves against STDs than were men who regarded women as primarily responsible.

Risky behaviors did not seem to be associated with pregnancy prevention, but the more risky behaviors men reported, the less likely they were to protect themselves against STDs. Contraceptive use to prevent pregnancy decreased with the number of recent sexual partners, whereas the percentage who had done something to protect against STDs increased. Older age at first intercourse was associated with contraceptive use for pregnancy prevention, but did not influence STD protection efforts. Moreover, the percentage who had recently protected themselves against STDs was nearly twice as high among men who said they had used a contraceptive at

first intercourse as among those who had not (29% vs. 16%).

Recent STD prevention decreased with age and was more common among black men than white men. Use of contraceptives to prevent both pregnancy and STDs increased with education. The proportion of men practicing contraception to prevent pregnancy was lower among Catholics than among other men. Similar associations were seen between partner's characteristics and pregnancy prevention (except for race, as we considered the man's race only).

Men who were in dating relationships were the most likely to be protecting themselves against STDs. The duration of the sexual relationship, no matter the type, had little association with contraceptive use; however, recent efforts to prevent STDs declined with the increasing length of a relationship. Only 5% of couples who were currently trying to have a baby were protecting themselves from STDs. (These couples were excluded from the multivariate analysis predicting contraceptive use to prevent pregnancy.)

## MULTIVARIATE ANALYSIS

According to the multivariate results (Table 2), men for whom ease of use was important in method selection were less likely than other men to be protecting themselves from STDs (odds of 0.76). Taking the reciprocal of these odds (in this case  $1/0.76 = 1.32$ ) yields the degree to which the odds of STD protection are increased from one level of importance to the next lowest level of importance. Thus, men who reported that ease of use was not at all important to them were three times as likely to be protecting themselves against STDs as were men who reported ease of use to be very important (1.32 raised to the fourth power, because of the four possible transitions to the next category of importance, or  $1.32^4 =$  odds ratio of 3.0).

**Table 2. Odds from multivariate analyses showing effects of respondents', partners' and couples' characteristics on likelihood of current contraceptive use and recent efforts to protect against STDs**

Characteristic	Method use to prevent pregnancy	Recent efforts to protect against STDs
<b>Respondent characteristics</b>		
Contraceptive choice		
Importance of ease of use	0.91	0.76**
Importance of protection from STDs	0.86**	1.12*
Importance of concerns for partner	1.39***	1.43**
Wants more children	0.86**	1.02
Equally responsible for children	0.88	1.33*
Who is responsible for contraception		
Woman more responsible	1.51	0.40**
Both responsible	1.10	0.88
Man more responsible†	1.00	1.00
Participation in risk behaviors	1.02	0.82***
>1 sexual partners since 1991	0.88**	1.09
Age at first intercourse	1.04*	1.02
Used contraceptives at first intercourse	1.07	1.67***
Age at 1993 survey	0.98	1.02

Race		
White†	1.00	1.00
Black	0.88	1.51
Other	0.89	0.87
Education		
<high school	0.56**	0.58
High school†	1.00	1.00
>high school	0.90	1.01
Religion		
Protestant	1.07	0.90
Catholic†	1.00	1.00
Other	0.64	0.36**
None	1.34	0.83
<b>Partner characteristics</b>		
Age at 1993 survey	0.96**	0.93***
Education		
<high school	1.00	0.62
High school†	1.00	1.00
>high school	1.65***	1.10
Religion		
Protestant	1.32	0.93
Catholic†	1.00	1.00
Other	2.60*	2.82**
None	1.66*	1.65
<b>Couple characteristics</b>		
Type of relationship		
Marriage	0.74	0.60*
Cohabitation†	1.00	1.00
Dating	0.72	2.01**
Duration of relationship	1.00	1.00
Currently trying to conceive	na	0.20***
<i>-2 Log likelihood</i>	<i>1700.8</i>	<i>1411.0</i>
<i>Chi-squared (df)</i>	<i>137.4 (29)***</i>	<i>287.8 (30)***</i>
<i>Unweighted N</i>	<i>1,376</i>	<i>1,587</i>
*p<.05. **p<.01. ***p<.001. †Reference group Note: na=not applicable.		

Compared with men who considered STD protection not at all important in choosing a contraceptive, those who viewed STD protection as very important were significantly more likely to have recently done something to prevent STDs (expected odds of 1.12<sup>4</sup>, or 1.6), and were significantly less likely to be using a method to prevent pregnancy (1/0.86<sup>4</sup>, or 1.8 times less likely).

The contraceptive choice measure that had the largest effect on both outcomes was concern for one's partner. Men who were most concerned about how their partner felt about a method and its health and pregnancy risks were about four times as likely as those who were least concerned to be using contraception to prevent pregnancy (extended odds of 3.7) and to be protecting themselves against STDs (extended odds of 4.2).

The desire to have more children decreased the likelihood of contraceptive use to prevent pregnancy, but had no significant effect on the likelihood of efforts to protect against STDs. Respondents who agreed that men have the same responsibility as women for their offspring were significantly more likely than those who did not to be protecting themselves against STDs (odds of 1.3). This factor, however, had no significant effect on the odds of contraceptive use.

Views on contraceptive responsibility significantly influenced the likelihood of STD protection, but not that of pregnancy prevention: Men who felt women were more responsible for contraception were only 40% as likely to be protecting themselves against STDs as were men who reported that men were more responsible. Thus, attitudes toward contraceptive choice and responsibility proved to contribute significantly to the decision to use contraceptives to prevent pregnancy and to do something to protect against STDs.

Men who had participated in risky behaviors were less likely to be protecting themselves against STDs than those who had not; however, such behavior had no effect on contraceptive use to prevent pregnancy. Having had more than one sexual partner since the 1991 interview reduced the likelihood of current contraceptive use to prevent pregnancy (odds of 0.88), but surprisingly had no significant influence on the likelihood of current STD protection.

Older age at first intercourse significantly increased the likelihood of contraceptive use to prevent pregnancy (by 4% with each additional year), but had no effect on protection against STDs. In contrast, while contraceptive use at first intercourse significantly increased the likelihood that men would be protecting themselves against STDs as adults by a factor of 1.7, this variable had no effect on current use to prevent pregnancy. And while the respondent's current age had no significant influence on either outcome, the partner's age significantly decreased the likelihood of both: For each additional year older that a partner was, the likelihood of contraceptive use for pregnancy prevention was lowered by about 4%, and that of STD prevention was decreased by about 7%.

Race had no effect on contraceptive use to prevent pregnancy or on STD protection, once the number of sexual partners was controlled for. (In another analysis of the same data set, black men reported more sexual partners than did white men.<sup>25</sup>) Educational level (either the respondent's or his partner's) had no significant effect on the likelihood of STD protection, but it predicted contraceptive use: Men who had not completed high school were 56% as likely to be using contraceptives to prevent pregnancy as were those who had. Moreover, respondents whose partner had more than a high school education were 65% more likely to be practicing contraception to prevent pregnancy than were those whose partner had not studied beyond high school.

Men whose partner was other than Protestant or Catholic (usually Jewish) were 2.6 times as likely as those whose partner was Catholic to be preventing pregnancy, while those whose partner had no religious affiliation were 1.7 times as likely. The affiliation of the respondent himself, in contrast, had no significant effect on contraceptive use. However, men of "other" religions were significantly less likely than Catholics to protect themselves from STDs (odds of 0.36). (Additional analyses, which are available from the authors, indicated that the likelihood of STD protection was higher

among "mixed" couples in which the female partner was affiliated with some "other" religion, but the male was not.) In general, mainstream religious affiliation had little or no effect on contraceptive use or STD protection.

The type of sexual relationship significantly influenced both contraceptive use to prevent pregnancy and efforts to prevent STDs: The more formal or established the relationship, the less likely couples were to practice contraception, and the more casual the relationship, the more likely they were to be trying to prevent STDs.

When we included couples who were currently pregnant or trying to get pregnant (the majority of whom were married), married couples were the least likely to practice contraception (not shown); however, once those couples were dropped from the analysis, marital status exerted no significant effect on contraceptive use. Marital status significantly affected the probability of STD protection, though: Married men were only 60% as likely to be protecting themselves from STDs as were cohabiting men. Men in dating relationships were the most likely to be protecting themselves from STD infection, as they were twice as likely as cohabiting men and more than three times as likely as married men to be doing so.

Moreover, couples who were trying to conceive were just 20% as likely to be taking actions to prevent STDs as were those who were not trying to conceive.

Finally, when we limited STD protection efforts to condom use only (not shown), the effect of the contraceptive choice variables changed somewhat: The influence of the importance of STD protection in method choice on condom use to prevent STDs was strengthened, and the effect of concerns about partners was weakened and became nonsignificant. Limiting STD prevention to condom use only also reduced the effect of the responsibility for children variable, which became nonsignificant. Moreover, the effects associated with "other" religions disappeared, and age at first intercourse became a statistically significant ( $p < .05$ ) predictor of condom use for STD prevention. All other associations remained basically unchanged.

## **DISCUSSION AND CONCLUSION**

In terms of choosing a contraceptive method, men's priorities were important factors in predicting their contraceptive use. Men for whom STD protection was important in selecting a method were more likely to be protecting themselves from STDs and were less likely to be practicing contraception to prevent pregnancy. For these men, STD protection was a priority over pregnancy prevention. How easy a method was to obtain and use was also important in predicting efforts to prevent STDs; thus, men would be more likely to protect themselves against STDs if they perceived effective methods were easy to obtain and use and did not interfere with sexual pleasure. Concern about ease of use did not predict contraceptive use to prevent pregnancy.

Men's concerns about their partners also influenced their contraceptive practice. Men who considered their partner's feelings and a method's pregnancy and health risks to be important factors in selecting a method were much more likely to be using one to prevent pregnancy and to be protecting themselves against STDs. Men who felt that they shared responsibility with their partner for the children they fathered were also more likely to be protecting themselves against STDs. In addition, men who felt that women should be responsible for contraception were less likely than others to be

protecting themselves against STDs, findings that are supported by previous research based on studies of adolescent **males**.<sup>26</sup>

The type of sexual relationship was also important in determining contraceptive use. Although past studies have suggested that men in stable, long-term relationships are more likely to discuss and use **contraceptives**,<sup>27</sup> our results indicate that married men are the least likely to use contraceptives to prevent pregnancy or to protect themselves against STDs. Married men probably perceive pregnancy costs to be lower than do single men, and the perceived risk of STD transmission is also probably lower among married men. Our findings show that married couples were less likely than cohabiting or dating couples to be using contraceptives because they were more likely to be trying to conceive. Men in dating relationships were the most likely to be protecting themselves against STDs. Thus, our results confirm earlier findings indicating that the more casual the relationship, the greater the likelihood of condom use and of other efforts to prevent **STDs**.<sup>28</sup>

The more risk behaviors men participated in, the less likely they were to protect themselves against STDs. Not using a contraceptive at first intercourse also decreased the likelihood that men would take actions to protect themselves from STDs as adults. Other sexual risk behaviors, such as early age at first intercourse and multiple sex partners, reduced the likelihood of contraceptive use for pregnancy prevention. Overall, men with high-risk lifestyles were less likely to be preventing pregnancy or STDs than were men with more conservative lifestyles; this finding is also supported by other **research**.<sup>29</sup>

Given the increased risk of STD exposure with multiple partners, it is surprising that the number of recent sexual partners had no influence on STD protection with a primary partner in this sample. Men with multiple partners might hesitate to use condoms because they don't want to alert their primary partner to their secondary relationship. Earlier research found that levels of condom use were higher with secondary partners than with primary partners; the investigators argued that not only does condom use with a primary partner raise questions about fidelity, but individuals are generally less concerned about the risk of infection from a primary partner than from a secondary **one**.<sup>30</sup>

Our results on the effect of education (used as a proxy for socioeconomic status) support the previously reported finding that men from lower socioeconomic groups feel that pregnancy enhances their masculinity more than do men from higher socioeconomic **groups**.<sup>31</sup> Likewise, post-secondary education among men's female partners increased the likelihood of contraceptive use, a finding that has been substantiated by research showing that pregnancy costs are greater to college-educated women with career expectations than such costs are to men; thus, highly educated women are more motivated than highly educated men to prevent **pregnancy**.<sup>32</sup>

The religious affiliation of a participant's female partner also influenced the likelihood of contraceptive use for pregnancy prevention. Couples in which the woman was affiliated with "other" religions (mainly Judaism) were more likely to use contraceptives to prevent pregnancy and to protect against STDs. This finding supports previous ones indicating that fertility among U.S. Jews is lower than that

Our findings highlight the importance of men's attitudes and characteristics in predicting contraceptive use in both marital and nonmarital relationships. The results underscore the need for the inclusion of men in intervention efforts. In particular, fostering awareness and concern among men for their partner's contraceptive concerns would increase contraceptive use—both to prevent pregnancy and to protect against STDs. In addition, encouraging men to take greater contraceptive responsibility and making contraceptives more accessible and easier to use would increase the likelihood that men would take measures to avoid STD infection.

Interventions also need to focus on men who engage in risky behavior; such efforts should encourage contraceptive use at first intercourse, which our analysis showed increased the likelihood of STD protection as adults. Understanding men's priorities regarding the prevention of pregnancy and STD protection, as well as the contributions that both men and women make to contraceptive decisions, can assist policy and program efforts to increase the effective use of contraceptives both to prevent unwanted pregnancies and to protect against the spread of STDs.

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