ARTICLES

Determinants of Trends in Condom Use In the United States, 1988–1995

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Context: *Although overall condom use has increased substantially over the past decade, information is needed on whether dual method use has also become more common. In addition, there is little information on which characteristics of women influence condom use and dual method use, and on whether these characteristics have changed over time.*

Methods: *Data from the 1988 and 1995 National Surveys of Family Growth are examined to evaluate trends in condom use—either use alone or use with another highly effective method (dual method use). Logistic and multinomial regression analyses are presented to analyze the influence of women's characteristics on condom use.*

Results: *Current condom use rose significantly between 1988 and 1995, from 13% to 19% of all women who had had sex in the past three months. Dual method use increased from 1% in 1988 to 3% in 1995, still a very low level. In both years, current condom use was higher among women younger than 20 (32–34% in 1995) than among those aged 30 or older (less than 20% in 1995). Likewise, current condom use was most common among never-married women who were not cohabiting in both 1988 (20%) and in 1995 (34%). Multivariate analyses showed that women in the early stage of a relationship (six months or less in duration) were much more likely than those in a long-standing relationship (five years or more in length) to use the condom (odds ratio, 1.5). In both 1988 and 1995, younger women and better educated women were more likely to be currently using the condom than were older or less-educated women. For example, in 1995, women younger than 18 were 1.8 times as likely as 40–44-year-olds to be using condoms, and college graduates were 1.5 times as likely as high school graduates to do so. Further, women who were not in a union and either had never been married or were formerly married were more likely to be current condom users in 1995 than were married women (odds ratios, 1.5–1.9). Poor women were less likely than higher income women to be condom users in 1995 (odds ratios, 0.7–0.8), but poverty had made little difference in 1988. Groups likely to be dual method users were those also likely to be at greater risk of sexually transmitted disease: women in a union of less than six months duration (2.8), women younger than 20 (4.6–6.8), unmarried women (2.8–7.5) and women with two or more partners in the past three months (1.7).*

Conclusions: *While the increase in condom use, especially among unmarried and adolescent women, is encouraging, condom use overall is substantially less than that needed to protect women and men against sexually transmitted diseases (including HIV). Moreover, steps need to be taken to understand why levels of dual method use are low and how they may be increased.*

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In 1986, the U.S. Surgeon General's report on AIDS advised persons whose sexual partners may have been exposed to HIV to always use a condom when engaging in sexual intercourse.[1] The continued high incidence of sexually transmitted diseases (STDs) has increased concerns among health professionals about unprotected sexual activity, especially among young people. In the United States, an estimated 15 million new cases of sexually transmitted infections occur each year,[2] and between one-quarter and one-half of all Americans are estimated to contract an STD in their lifetime.[3] STD prevention concerns policymakers and service providers not only because STDs are prevalent, but also because they often result in serious health consequences and are costly to treat.[4]

Existing data document a substantial increase in condom use over the past decades. Among all women aged 15–44 who reported practicing contraception in the preceding month, the proportion relying on the condom as their most effective method rose from 12% in 1982 to 15% in 1988 and to 20% in 1995.[5] In contrast, the proportion of currently married women relying on the condom declined from 22% of all current users in 1965 to 11% in 1976 (as use of methods such as the pill, IUD and sterilization increased), but by 1995 had risen to 17%.[6]

The upward trend in condom use has been stronger among never-married women. The proportion of all never-married contraceptive users who were currently relying on the condom increased from 12% in 1982 to 20% in 1988 and to 30% in 1995.[7] There are at least two reasons why higher condom use is not unexpected among never-married women: First, such women are more likely to be exposed to the risk of STD infection than are married women, and to perceive that they are at high risk of STDs;[8] in addition, the condom may be more convenient for never-married women, especially for those who do not have sex regularly.

While the emergence of HIV and AIDS has heightened awareness about the need for disease prevention, the traditional need for contraception—to prevent unintended pregnancy—remains important: Of the approximately six million pregnancies that occur in the United States annually, more than one-half are unintended.[9]

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Correct and consistent condom use not only provides the best protection against STDs for sexually active individuals, but is also a reliable means of preventing unintended pregnancy.[10] However, use of both the condom and a highly effective systemic method of pregnancy prevention*—commonly referred to as dual method use—is recommended as the best means of achieving protection against both unintended pregnancy and STDs.[11] Overall, the condom is now the third most commonly used contraceptive method in the United States among sexually active women aged 15–44, surpassed only by female sterilization and the pill.[12]

People are more likely to use the condom for STD prevention if they have characteristics associated with greater potential risk of STDs.[13] In a 1996 national survey of men and women aged 18–59, 49% of those in an ongoing relationship said they used the condom for disease prevention, compared with 88% of those in a casual relationship.[14] Only 10% of those in an ongoing relationship said they used the condom for disease prevention alone, compared with 21% of those in a casual relationship. On the other hand, 48% of those in an ongoing relationship said they used the condom for pregnancy prevention only, compared to 11% of those in a casual relationship.

While women's motivations and reasons for choosing the condom alone or dual method use may be inferred from users' characteristics, actual information about reasons for this choice is very scarce. For example, in the 1995 National Survey of Family Growth (NSFG), questions about reasons for condom use in the 12 months preceding the interview were addressed only to those who had ever used the condom for STD prevention. These data could not be compared with reasons for condom use in the 1988 NSFG because the time period to which those data referred was unclear. Furthermore, available data do not permit examination of reasons for choosing a particular method or combination of methods.

The condom's crucial role in protecting against STDs, as well as its growing importance as a contraceptive, argue for continued research on condom use, even though the data are limited. Up-to-date information on levels and trends in condom use and in dual method use, and analyses of factors related to these behaviors, are needed to assess the impact of the constellation of factors that affect condom use—changes in social attitudes, education and information efforts, as well as more targeted intervention programs. Such research can also help guide policy on further steps to increase condom use and dual method use.

In this article, we examine use of the condom alone and use of the condom along with a systemic contraceptive method, based on data from the two most recent cycles of the NSFG, which were carried out in 1988 and 1995. We address three questions: How have condom use and dual method use changed over time? Which characteristics of women and of their relationships influence condom and dual use? Finally, have there been changes over time in the characteristics that are associated with condom use?

Methodology

Data

The 1988 NSFG interviewed a nationally representative sample of 8,450 civilian noninstitutionalized women who were aged 15–44 as of March 1, 1988. In the 1995 survey, a national probability sample of 10,847 civilian noninstitutionalized women who were aged 15–44 as of April 1, 1995, was interviewed. In both surveys, information was collected on a variety of issues relating to the women's background, family and fertility experiences.

The data from these two surveys are highly comparable. However, there are some minor differences. For example, the measurement of sexual activity differed slightly between the two surveys. To achieve comparability across surveys, we defined the variable "ever had sexual intercourse" to include all women who had had sexual intercourse after menarche, including (in the case of the 1995 survey) those who had only ever had involuntary intercourse after menarche.

A further difference between the two surveys is that the 1995 NSFG explicitly defined intercourse as heterosexual, including the phrase "with a man" in the relevant questions, while the 1988 survey did not. However, we expect that 1988 respondents would have interpreted the question as meaning heterosexual intercourse; therefore, our trend analyses assume that the measures are comparable across the two surveys. Analyses of current or recent condom use are based on all women who had intercourse in the three months before the interview, because all are potentially at risk of STDs.

Dependent Variables

We explore a number of different measures of condom use in this article—ever use, use at first intercourse, use at last intercourse and use in the month of the interview (also termed current use). In descriptive analyses, we examine all of these measures; in multivariate analyses, we focus on current use of the condom alone or use with a systemic method. Current use came from a calendar of contraceptive use, which requested women to give a month-by-month history of contraceptive use since January 1991, while data on use at first and last intercourse came from separate questions.

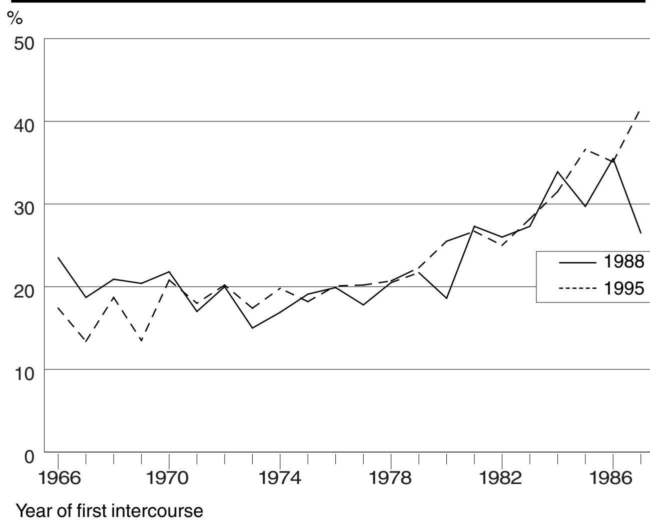
For all measures of contraceptive use analyzed here, we constructed variables from the original responses, in which women could report use of up to four methods. We did not use the standard recode variables provided on the public-use data, because these variables would not allow us to identify all condom users. Women are classified into a single method use or nonuse category, giving higher priority to certain statuses.[15] For example, in the standard current-use variable, pregnancy is given priority over use of a method: If a woman is pregnant and she is currently using a method, she is classified as "pregnant," not as a contraceptive method user. We used the original response categories to ensure that all condom users were identified—both users of the condom alone and users of the condom along with another method. The result of reconstructing contraceptive use variables in this way is that the level of condom use is somewhat higher in this article than in other studies that used the standard variables.

In introducing the series of questions on contraceptive use, the 1988 NSFG described contraception as being used for birth control and family planning. By comparison, the introductory statement to the contraceptive use segment of the 1995 NSFG mentioned use of methods for birth control or for preventing STDs.†[16] However, subsequent questions on contraceptive use in the 1995 NSFG do not explicit-

*Methods that are considered to be highly effective are: sterilization, implant, injectable, pill and IUD. These methods are also referred to as "systemic" methods.

†The introduction to the method use section (Section C) in the 1988 questionnaire read: "Another important part of women's health is the use of methods to plan the number of children one has and when they are born. Card 10 lists methods that some people use for birth control and family planning. As I read each one, please tell me if you know how it is used. Just give me a 'yes' or 'no' answer. Do you know how (METHOD) is used?" In the 1995 NSFG, the introduction to the method use section (Section E) was as follows: "Card E-2 lists methods that some people use for birth control and to prevent sexually transmitted disease. As I read each one, please tell me if you have ever used it for any reason. Just give me a 'yes' or 'no' answer. Please answer yes even if you have only used the method once. Have you ever used…?"

Figure 1. Percentage of women aged 15–44 who used the condom at first sex, 1988 and 1955 National Survey of Family Growth



ly refer to use for STD prevention; in fact, the question on use at first intercourse refers simply to use of birth control methods.* If this difference across the two surveys had any impact at all, the method most likely to be affected would be the condom, which is most widely recommended for protection against both pregnancy and STDs.

To examine whether respondents interpreted the questions similarly in both surveys, we compared responses from the two surveys to the questions on contraceptive use at first sexual intercourse. We assumed that if the questions were interpreted similarly by women in each cycle of the NSFG, the responses for women who had first intercourse in the same year would be very similar. Figure 1 shows that this is generally the case, with the level of condom use at first intercourse being relatively similar for each year. The only exception is in 1987, and this is probably due to the small sample size for this year in the 1988 survey. As expected, both surveys show a rising overall trend in condom use at first intercourse.

Thus, the different introductory statements probably had only a minimal effect on responses to questions on contraception. It remains uncertain, however, whether results for other measures of contraceptive use for which a similar consistency check cannot be done (such as use at last intercourse and use in the month of interview) were affected.

Independent Variables

We considered a number of demographic and social characteristics that were measured in the NSFG to be relevant in this analysis of condom use—age at interview,† race or ethnicity, education, religion and poverty status. Two relationship characteristics are examined—union status and duration of the current relationship. Each respondent was asked about all of her male partners since January 1991, and from this partnership history we identified currently sexually active women's most recent partner. In addition, we included in the analyses two measures of women's likely need to practice contraception for birth control or for STD prevention—their future fertility preferences, and their number of sexual partners in the three months preceding the interview. For some unmarried, noncohabiting women, information on their number of partners in the past three months was missing (4% of the total number of women who had had sex in the three months before the interview).[17] These women are shown as a separate category for the variable on number of partners.

We selected variables for inclusion in the analyses based on both theoretical and empirical indications that they are important predictors of condom use. Because the condom provides protection against STDs, it is more likely to be used by women who are at risk of or apprehensive about contracting these diseases. In the United States, exposure to multiple partners over relatively short periods of time, a key risk factor for STDs, tends to be higher among unmarried and younger women, black women and those who want more children.[18]

Because of the active involvement of male partners in condom use, one would expect their characteristics to have a strong influence on whether the condom is used. Women were asked about some characteristics of their sexual partners only in the 1995 NSFG, however, so these data could not be used in an analysis of change. In addition, partners' characteristics were highly correlated with respondents' characteristics, and therefore are not included in these analyses.

Regression Models

•*Any condom use*, 1988–1995. We first use logistic regression to examine factors associated with any condom use in 1988 and in 1995. The dependent variable is a dummy variable with a value of one if a woman is currently using the condom (whether alone or along with another method) and zero if she is only using a method other than the condom. Thus, the analysis is based on all current contraceptive users, and the aim is to predict the likelihood that a woman will use the condom, given that she uses some contraceptive method.

This and subsequent analyses were limited to contraceptive users because factors underlying the decision to use a particular method instead of another may be very different from those informing the decision to use a contraceptive. Since the latter is not the focus of this research, we excluded nonusers from the regression models. Duration of the current relationship could only be included in the analysis of the 1995 NSFG, since this measure was not available for 1988.

We decomposed the change in condom use between 1988 and 1995 into three component parts: the part due to change in subgroup-specific rates of condom use, the part due to change in composition, and the part due to the interaction between condom use rates and subgroup composition.‡[19]

•*Condom use alone and dual method use, 1995*. We used multinomial logistic regression to examine the impact of characteristics on current condom use, alone or along with a systemic method, among all current contraceptive users in 1995. The model that we estimated had a dependent variable with three categories: used the condom alone; used the condom along

*In the 1988 NSFG, the question was: "Think back, the first time you ever used a method of birth control, or had intercourse with a partner who used a method, which method on Card 10 was that?" The corresponding question in the 1995 NSFG was: "The very first time you ever used a birth control method, which method on Card E-3 did you use? If you used more than one method that first time, please tell me about each one. For example, a woman's partner might use a condom and she might use the pill on the same occasion."

†We used age of respondents at interview, rather than the respondents' age as of the date used for selection of the survey sample.

‡The change due to rates is expressed by differences in the slopes (i.e. differences in regression coefficients and the intercepts). It shows the proportion of change in condom use that is due to changes in the rate at which group members translate their attributes into condom use. Composition change is expressed as the part of the overall change that results from differences in the means of the explanatory variables. It shows the proportion of change in condom use that is accounted for by change in group composition between the two periods. Finally, the interaction component is the covariation between the means and the coefficients of the two time periods; it is the interaction between the rates and composition changes over time.

with a systemic method; and used any other method than the condom.* The resulting estimates show the effects of characteristics on the likelihood that a woman used the condom alone or with a systemic method, respectively, rather than used any other method.

Sample Weights and Significance Testing
All estimates presented are weighted national estimates. Standard errors were computed taking into account the complex sample design involved in both cycles of the NSFG. For the 1988 survey, we calculated these statistics using WestVarPC, a software package that computes estimates and replicates variance estimates.[20] For the 1995 NSFG, we derived standard errors using STATA.[21] We conducted two-tailed significance tests to ascertain the statistical significance of the difference between corresponding estimates computed from data for both years.

Results

Levels and Trends in Condom Use
Condom use is now quite common in the United States (Table 1). In 1995, 82% of women aged 15–44 who had had sexual intercourse had ever used the condom, an increase of 21 percentage points from the level reported in 1988 (61%). An earlier report showed that younger women are more likely to have ever used the condom than are older women: In the 1995 NSFG, 94% of women aged 15–19 who were ever sexually active had ever used the condom, compared with 87% of those aged 25–29 and 73% of those aged 40–44.[22] This suggests that the increase in overall use between 1988 and 1995 resulted primarily from increased condom use among younger women.

To measure more recent experience, we examined condom use at first intercourse among women aged 15–24 (Table 1). Use of the condom at first intercourse increased substantially, from 30% in 1988 to 57% in 1995. This finding substantiates the rise, reported elsewhere, in condom use at first intercourse over the past 15 years among respondents to the 1995 NSFG who had premarital intercourse, from 25% in 1980–1984 to 54% in 1990–1995.[23]

Use of the condom at last intercourse (among women who had sex in the three months before the interview) also increased significantly, from 13% in 1988 to 17% in 1995. Moreover, among women who had recently had intercourse, the proportion who were currently using the condom increased from 13% to 19% between the two surveys.

Table 1. Percentage of sexually experienced women aged 15–44 who ever used the condom, who used the condom at first intercourse (among women aged 15–24 only), who used the condom at last intercourse in the past three months and who are currently using the condom, all by union status, 1988 and 1995 National Survey of Family Growth

Measure	All		In union		Not in union†	
	1988	1995	1988	1995	1988	1995
% who ever used condom	60.8	82.1***	60.7	79.3***	60.9	86.7***
% of 15–24-year-olds who used condom at first intercourse‡	29.9	56.6***	25.9	43.7***	32.0	63.2***
% who used condom at last intercourse in 3 months preceding interview	12.6	16.9***	10.7	12.3*	17.1	28.1***
Among women who had intercourse in last 3 months, % currently using condom	13.3	19.4***	12.3	15.1***	15.5	30.0***

*Difference between 1988 and 1995 is significant at p<.05. ***Difference between 1988 and 1995 is significant at p<.001. †Never-married and formerly married women who are not currently cohabiting. ‡Unweighted sample sizes for women aged 15–24 who had ever had sexual intercourse by 1988 and 1995 were 1,831 and 2,118, respectively.

In the case of almost all measures in both years, condom use was substantially higher among women who were not in a union than among those who were (Table 1). In addition, increases in condom use among sexually active women who were not in a union were much larger than increases among all sexually active women or among women who were in a union. In fact, while current use varied little by union status in 1988 (12% vs. 16%), by 1995 those not in a union were twice as likely as those in a union to have used a condom at last intercourse (15% vs. 30%).

Patterns of Method Use
Condom use among all women who had had sex in the past three months† rose significantly over time, from 13% in 1988 to 19% in 1995 (Table 2, page 268). The majority of current condom users in both years were using the condom alone—57% in 1988 and 66% in 1995. Almost all of the rise in condom use between 1988 and 1995 was due to increased use of the condom alone (five points of the six-percentage-point increase).

In 1995, nearly 7% of sexually active 15–44-year-olds used the condom with some other method, either systemic or nonsystemic; this was slightly higher than the level of about 6% observed in 1988. Use of the condom with a systemic method in 1995 was low in absolute terms, but higher than the comparable proportion in 1988 (3% vs. 1%). Paralleling the rise in condom use were small but significant declines in the use of nonsystemic methods alone and in nonuse of any method. In fact, the overall increase in method use, from 75% in 1988 to 78% in 1995, was due primarily to an increase in condom use, mainly in the use of condoms alone.

In both years, younger women were more likely to be using the condom (alone or with other methods) than were older women (Table 2). Overall condom use increased significantly between 1988 and 1995 in all age-groups except among women younger than 18 and those aged 40–44. Condom use alone accounted for the majority of condom use in all age-groups, and rose significantly from 1988 to 1995 for everyone but adolescents and women aged 40 or older.

In 1988 and 1995, never-married, noncohabiting women had a higher level of condom use than women of other union status (Table 2). Since this category includes most adolescent women, the finding is consistent with the age pattern. Condom use increased significantly between 1988 and 1995 among women of all union statuses, with the biggest increases among unmarried women. Among never-married women, use of systemic methods alone declined from 47% to 38%, while there were large increases in the use of the condom alone (from 11% to 21%) and the condom in combination with a systemic method (from 3% to 8%). The substantial increases in condom use were accompanied by a decline in the proportion of never-married women who were not using any method and were at risk of unintended pregnancy.

Social and Demographic Determinants
•*Levels and trends in condom use, 1988 and 1995.* The decomposition of the change in condom use between the two years indicates that about 86% of the rise in the overall level of condom use (from 17% of current users in 1988 to 24% in 1995) is

*Women who used the condom and a nonsystemic method are included in the category "only condom use." These women include both those who alternated the condom with another nonsystemic method and those who used them concurrently.

†These analyses are based on all sexually active women, because even though some may not be at risk of unintended pregnancy, they may be at risk of STDs.

Table 2. Percentage distribution of sexually active women aged 15–44, by current method use and reproductive risk status, according to age and union status

Characteristic	Condom				Other methods		No method		Total	N
	Total	Condom only	Plus systemic method	Plus non-systemic method	Systemic	Nonsystemic	At risk of unintended pregnancy	Not at risk of unintended pregnancy		
1988 NSFG										
Total	**13.3**	**7.6**	**1.2**	**4.5**	**52.0**	**9.3**	**8.2**	**17.3**	**100.0**	**6,761**
Age at interview										
<18	30.7	20.2	5.4	5.1	28.4	4.0	27.1	9.9	100.0	223
18–19	24.1	14.1	3.3	6.7	44.9	5.3	15.6	10.4	100.0	320
20–24	14.6	7.9	2.6	4.1	53.5	7.7	10.1	14.4	100.0	1,033
25–29	13.8	8.0	0.9	4.9	49.6	9.9	8.4	18.3	100.0	1,402
30–34	11.3	5.8	0.9	4.6	51.5	11.6	5.8	19.7	100.0	1,524
35–39	11.2	6.1	0.4	4.7	55.4	11.6	5.2	16.7	100.0	1,251
≥40	9.3	5.9	0.4	3.0	57.8	6.7	6.0	20.4	100.0	1,008
Union status										
Currently married	12.5	7.5	0.6	4.4	52.6	10.1	4.2	20.6	100.0	3,962
Cohabiting	10.6	6.1	0.6	4.0	53.6	9.7	7.4	18.6	100.0	400
Formerly married	6.1	2.3	1.4	2.4	57.0	7.7	11.7	17.5	100.0	750
Never-married	19.5	10.5	3.3	5.7	47.4	7.3	18.9	6.9	100.0	1,649
1995 NSFG										
Total	**19.4*** **	**12.9*** **	**2.7*** **	**3.8**	**51.7**	**7.0*** **	**6.6*** **	**15.3*** **	**100.0**	**8,602**
Age at interview										
<18	31.6	20.0	6.4	5.2	26.4	3.4	21.7	17.0	100.0	243
18–19	33.7*	19.6	7.4*	5.3	33.7*	5.9	15.5	12.7	100.0	346
20–24	27.1***	17.6***	5.7***	4.0	46.5**	5.6	7.4	13.3	100.0	1,189
25–29	21.6***	16.4***	3.1***	2.7**	48.3	6.4***	5.6*	17.6	100.0	1,488
30–34	17.7***	11.3***	2.2**	4.2	54.0	7.9***	4.9	15.5***	100.0	1,906
35–39	15.7***	10.5***	1.1*	3.8	56.4	8.1*	5.1	15.0	100.0	1,868
40–44	11.7	7.4	0.5	3.7	60.1	7.5	5.8	15.0***	100.0	1,562
Union status										
Currently married	14.6**	10.4***	0.6	3.6	55.5*	7.6***	4.3	18.0**	100.0	5,167
Cohabiting	18.7***	12.8***	2.3**	3.6	54.1	7.5	4.6	15.2	100.0	742
Formerly married	20.4***	11.6***	5.4***	3.5	53.1	5.5	8.8	12.1*	100.0	807
Never-married	33.8***	21.0***	8.3***	4.6	38.4***	5.6	13.7***	8.5	100.0	1,886

*Difference between 1988 and 1995 is significant at p<.05. ** Difference between 1988 and 1995 is significant at p<.01. ***Difference between 1988 and 1995 is significant at p<.001. *Note:* Percentages are based on weighted data; all Ns are unweighted.

explained by increased rates of condom use within population subgroups (not shown). Changes in the demographic and socioeconomic composition of contraceptive users and interactions between these two sets of factors accounted for the remaining 14% of the overall change (5% and 9%, respectively). There has been little change in the composition of users between 1988 and 1995 (Table 3), which explains the small contribution of this component to overall change in condom use between the two years.

Our first set of multivariate analyses showed that age exerts a significant impact on the likelihood that a sexually active woman would use the condom in both 1988 and 1995 (Table 3), although the strength of this variable declined over time. In 1988, the odds of using the condom were about 11 times higher for women younger than 18 than for women aged 40–44, four times higher for those aged 18–19 and twice as high for women aged 20–29. By 1995, only younger adolescents and women aged 35–39 were significantly more likely than 40–44-year-olds to be using the condom. The decline in the effect of age on condom use was significant only for adolescents, however.

In 1988, formerly married women were less likely to use the condom than were currently married women, but by 1995 both formerly married and never-married women were more likely to be doing so. This pattern of increasing differences between married women and those not in union was significant for both formerly married and never-married women.

Black non-Hispanic women and women of other racial or ethnic backgrounds were more likely to be using the condom in 1995 than were white non-Hispanic women. This represents a significant change from 1988, when there was little difference in condom use by race or ethnicity. Higher education was positively related to the choice of the condom as a contraceptive method in both 1988 and 1995. In 1988, method users who had attained at least a college degree were 90% more likely to be using the condom than were high school graduates, and in 1995 they were 47% more likely. In both years, Catholics and women who were Jewish or of some other religion were more likely than Protestants to use the condom. In 1988, poverty status had no significant relationship with the probability of condom use, once the effects of other variables were controlled. In 1995, however, poorer women were less likely to be using condoms. These changes were not significantly different, however, from the change among higher income women.

In 1995, the odds of condom use among women who wanted to have more children were three times as high as among women who wanted to stop childbearing, a significant change from 1988, when the groups did not differ. In that same year, women who had had two or more sexual partners in the three months before the interview were about 76% more likely to use condoms than women reporting only one partner.

The duration of a partnership is likely to influence the decision to use the condom. However, when the duration of the current relationship was taken into account (in the first model shown in Table 4, page 270), the effects of other charac-

teristics on current condom use hardly changed (when compared with the 1995 model in Table 3). The only large change was that once we entered duration of partnership into the model, women whose number of partners in the recent three months was unknown became significantly more likely to be using the condom than women who had one partner.

We would expect the duration of a relationship to be strongly related to condom use, with use being much higher in the early stages of a relationship and then declining with increased duration. In fact, contraceptive users who had been in a relationship for less than six months were about 50% more likely than those in relationships of five or more years to report condom use. There was little difference in the level of condom use among women in relationships for other durations, however.

Condom Only or with Systemic Method

The patterns of relationships between women's characteristics and their use of the condom alone strongly reflect the patterns seen for any use of the condom (Table 4). However, formerly married women were no longer significantly different from married women, and women whose number of partners was missing were no longer significantly different from women with one partner. Moreover, those in relationships of less than six months duration were no longer significantly different from women in long-standing relationships. While method users in a relationship of less than six months were 53% more likely than those in relationships of five years or more to use condoms at all, they were only 27% more likely to use condoms as their only method.

The patterns associated with women's use of condoms along with a systemic method are quite different from those related to condom use alone, and these differences suggest that the former are more likely to be relying on condoms for the prevention of STDs. Non-Hispanic black women are 74% more likely to be using condoms with a systemic method than are non-Hispanic white women. Those who reported no information on their number of partners were 28 times as likely to be using condoms in addition to a systemic method as were women who had only one partner. Women who were in a relationship for less than six months were 2.8 times as likely as those in a long-term relationship to report dual method use. While women who wanted additional children were more likely than other women to use the condom along with a systemic method, the effect of fertility preference was smaller in this instance than it was for the use of condoms alone (odds ratios of 1.8 vs. 3.1).

While women's age had little effect on their use of the condom alone, younger method users were much more likely than older women to be using the condom along with a systemic method. In fact, adolescent method users are 5–7 times as likely as women aged 40–44 to be using the condom plus a systemic method, rather than using some method other than the condom. All unmarried women (including cohabiting women) were significantly more likely to use dual methods than were currently married women, and those who were unmarried and not cohabiting were more than seven times as likely to do so. Hispanic women were no more or less likely than non-Hispanic white women to use the condom alone, but were much less likely to use the condom along with a systemic method.

Table 3. Percentage distribution of contraceptive users aged 15–44, by characteristic, and odds ratios from logistic regression of the likelihood of current condom use, 1988 and 1995

Characteristic	1988		1995	
	% dist.	Odds ratio	% dist.	Odds ratio
Age at interview				
<18	2.9	11.203***	2.6	1.802*,†††
18–19	5.1	4.121***	4.1	1.425†††
20–24	16.0	1.702**	15.1	1.075
25–29	20.3	1.624**	17.4	1.095
30–34	21.3	1.296	21.2	1.099
35–39	19.3	1.172	21.5	1.272*
40–44 (ref)	15.1	1.000	18.2	1.000
Union status				
Currently married (ref)	64.4	1.000	62.0	1.000
Cohabiting	6.4	0.656	9.0	1.069
Formerly married	8.4	0.527**	8.5	1.548***,†††
Never-married	20.9	0.970	20.6	1.891***,†††
Race/ethnicity				
White non-Hispanic (ref)	76.6	1.000	73.3	1.000
Black non-Hispanic	12.1	0.863	12.9	1.397***,†††
Hispanic	8.2	0.890	10.1	1.006
Other	3.1	1.048	3.7	1.985***
Education				
<high school	16.2	0.714*	14.3	0.941
High school (ref)	36.7	1.000	38.3	1.000
Some college	27.3	1.408**	25.8	1.160
College graduate/higher	19.9	1.872***	21.5	1.465***
Religion				
None	6.5	1.475	12.3	1.122
Protestant (ref)	59.5	1.000	52.7	1.000
Catholic	30.3	1.283*	29.7	1.327**
Jewish/other	3.7	2.170***	5.4	1.908***
Income (as % of poverty level)				
0–99	12.0	0.925	12.4	0.711**
100–249	24.8	1.010	28.7	0.808*
250–449	33.2	0.985	30.8	0.920
≥450 (ref)	29.9	1.000	28.1	1.000
Preference for more children				
Wants more	50.8	1.090	40.4	2.888***,†††
Wants no more (ref)	49.2	1.000	59.6	1.000
No. of partners in last 3 months				
1 (ref)	95.5	1.000	90.6	1.000
≥2	3.3	1.388	5.4	1.756***
No response	1.2	0.512	4.0	1.173
Total	100.0	na	100.0	na

*Significantly different from reference category at p<.05. **Significantly different from reference category at p<.01. ***Significantly different from reference category at p<.001. †††Significantly different from 1988 at p<.001. *Notes:* Unweighted Ns are 4,973 for 1988 and 6,729 for 1995. ref=reference category. na=not applicable.

Discussion

Use of contraceptive methods among women at risk of unintended pregnancy increased between 1988 and 1995, from 90% to 92%, and the methods used changed as well. As a result of the introduction of new contraceptive methods in the early 1990s, use of oral contraceptives decreased from 31% to 27% of contraceptive users, as 4% of users moved to long-acting hormonal methods such as injectables and the implant.[24]

Increases in condom use were perhaps even more striking because they reflected changes in attitudes about and perceived need for an existing method, rather than the impact of new technology. The proportion of method users relying on the male condom as their most effective method rose from 12% in 1982 to 15% in 1988 and then to 20% in 1995,[25] and the proportion of method users relying on condoms alone or condoms plus another method rose from 17% to 24%. These increases were steepest among never-married and formerly married women, undoubtedly reflecting increased concern and public education about the risks of HIV and other STDs.

It is encouraging that condom use has risen, especially among unmarried and adolescent sexually active women. However, only 25% of women who had had sex with more than one man in the past year

Table 4. Odds ratios from logistic regression analysis of any condom use and multinomial regression analyses of condom use only and condom use with a systemic method, 1995

Characteristic	Any condom use†	Use of condom only‡	Use of condom plus systemic method‡
Age at interview			
<18	1.644	1.483	6.842**
18–19	1.386	1.226	4.644**
20–24	1.076	0.945	3.496**
25–29	1.103	0.994	3.224**
30–34	1.098	1.000	3.048**
35–39	1.267*	1.231	2.003
40–44 (ref)	1.000	1.000	1.000
Union status			
Currently married (ref)	1.000	1.000	1.000
Cohabiting	1.071	1.001	2.854**
Formerly married	1.395*	1.136	7.246***
Never-married	1.730***	1.459**	7.454***
Race/ethnicity			
White non-Hispanic (ref)	1.000	1.000	1.000
Black non-Hispanic	1.428***	1.349**	1.740**
Hispanic	1.008	1.084	0.364*
Other	1.999***	2.045***	1.553
Education			
<high school	0.950	1.023	0.526*
High school (ref)	1.000	1.000	1.000
Some college	1.156	1.168	1.100
College graduate/higher	1.473***	1.473***	1.496
Religion			
None	1.122	1.189	0.766
Protestant (ref)	1.000	1.000	1.000
Catholic	1.325**	1.349**	1.177
Jewish/other	1.884***	1.923***	1.596
Income (as % of poverty level)			
0–99	0.714**	0.698**	0.820
100–249	0.804*	0.801*	0.865
250–449	0.911	0.873	1.354
≥450 (ref)	1.000	1.000	1.000
Preference for more children			
Wants more	2.898***	3.098***	1.793**
Wants no more (ref)	1.000	1.000	1.000
No. of partners in last 3 months			
1 (ref)	1.000	1.000	1.000
≥2	1.671***	1.661***	1.654*
No response	2.328*	1.977	27.909**
Duration of current relationship (in months)			
<6	1.526**	1.274	2.840***
6–17	1.054	1.019	1.340
18–59	0.933	0.916	1.145
≥60 (ref)	1.000	1.000	1.000
No response	0.544	0.620	0.057**

*Significantly different from reference category at p<.05. **Significantly different from reference category at p<.01. ***Significantly different from reference category at p<.001. †Versus nonuse of the condom. ‡Versus use of any method other than the condom. *Notes:* Unweighted N is 6,729. ref=reference category.

or who reported that their partner had had sex with other women in the past year use condoms.[26] Thus, increasing sexually active women's and men's protection against STDs, including HIV, through condom use remains a public health priority.

Women's reasons for using the condom may be inferred from the characteristics of users. Use is highest among method users who are young, who are not married or cohabiting, and who recently have had more than one partner—i.e., those at greatest risk of contracting STDs. Further, condom use increases more steeply among adolescents and women not in a union than it does among other women. Those who use condoms in addition to a systemic (and therefore highly effective) contraceptive method are especially likely to be concerned about preventing STDs as well as pregnancy. While such women represent a minority of condom users, they are more likely than those using the condom alone to be young and unmarried and to have been in a relationship for less than six months.

It is striking that most condom use, and most of the increase in condom use, involves the condom alone rather than dual method use. On the one hand, this finding may reflect growing comfort and confidence in using condoms effectively. Conversely, it may also reflect difficulties in using two methods. If the other method is nonsystemic, such as spermicide or periodic abstinence, it and the condom can be used together to boost potential effectiveness or in alternation. In this case, though, there is less need to consider whether the condom is providing pregnancy prevention or STD prevention. If the other method is systemic, its potentially high level of effectiveness in preventing pregnancy makes the condom's contribution in preventing STDs more obvious.

Even with "perfect" use, condom users' probability of becoming pregnant unintentionally is much higher than the risk for those using hormonal methods, the IUD or sterilization. Yet the perfect-use annual failure rate for condoms is low in absolute terms—approximately 3%.[27] However, because the typical-use condom failure rate is much higher—about 15% annually[28]—use of the condom alone provides many individuals with only moderate protection against pregnancy. Even though the condom offers the best available protection against infection with STDs, inconsistent or incorrect use decreases its effectiveness in preventing infection.

Although condom use has increased dramatically in past years, a number of challenges remain. The level of condom use is substantially less than the proportions of women and men at risk for STDs. Work to increase condom use needs to proceed—through education and prevention programs, by increasing condom availability, by improving people's attitudes toward and ability to use condoms, and by developing condoms that are more acceptable to both men and women. At the same time, experience at preventing unintended pregnancy clearly indicates that having a variety of alternatives increases the chance that an individual or couple will find the method best suited to them at a given stage of their life. Greater attention should also be directed toward speeding the development of other means of preventing STDs, such as vaginal microbicides that can be used by women.

More information is needed about how to improve the effectiveness of condom use for pregnancy prevention and STD prevention. The low level of dual method use (condoms along with systemic contraceptives) raises questions about how clearly messages about condom use are getting through to women who use these methods, and how receptive and able they are to have their partner use a condom when they are using a highly effective contraceptive method. More work is needed to guide potential users in how best to integrate dual method use.

It is astounding that in a time of sophisticated technological advancement, couples are increasingly turning to one of the oldest available methods. The condom fell out of favor with many users when methods that women could use, primarily the oral contraceptive, became available. To some extent, this represented not only a change in contraceptive control from men to women, but also perhaps a decrease in the need to acknowledge and discuss contraception within a relationship, since the pill can be used away from the time of intercourse.

The recent increase in condom use was undoubtedly spurred by concerns about HIV and other STDs, which tend to put women and men in positions of mistrust, or even opposition. However, these concerns may ultimately increase acknowl-

edgment and discussion of sexuality and use of methods, such as the condom, that are more closely linked to intercourse. Clearly, increased awareness and public discussion of HIV and other STDs have led to dramatic changes in patterns of method use, especially among younger people. Whether these increases will continue, and whether higher use levels among young people will translate into continued higher levels of condom use when they are older, remain questions for future investigation.

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