

Women Who Put Condoms on Male Partners: Correlates of Condom Application

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Objective: To identify correlates of women applying condoms. **Methods:** Cross-sectional survey of 533 sexually-active women; questionnaire. **Results:** Of the condom users ($n=322$), 31.7% reported applying condoms at least once—an average on 59.7% of the occasions. Compared to nonapppliers, appliers had more positive affect toward sexually related situations (erotophilia, $P=.004$) and a higher frequency of sex ($P=.003$). Condom users, compared to nonus-

ers, were significantly younger ($P=.001$), were less likely to be in sexually exclusive relationships ($P=.001$) or married ($P=.01$), and reported more partners in the past 3 months ($P=.001$). **Conclusions:** Condom-applying women may have more positive attitudes toward sexuality and engage in a higher frequency of sexual activity.

Key words: women, condoms, sexual behaviors, sexually transmitted diseases, education

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Recently there has been increased attention to women's taking the initiative in male condom use.¹⁻³ However, few published studies have ac-

tually assessed whether women put the condoms on their male partners, and very little is known about the characteristics of women who apply condoms.⁴ These questions are important because sexual risk reduction programs often include instruction to women about condom use despite scant evidence regarding whether, and how often, women apply condoms even if they know how.

Crosby et al.,¹ in a study of African American adolescent females, reported that 23% had some experience in applying condoms on a male partner. Compared to those who did not apply condoms, the group of women who had applied condoms were neither more nor less likely to have been diagnosed with a sexually transmitted disease (STD). Using the same sample, Grimes² found that women who applied condoms had a higher frequency of sexual communication and greater condom use self-efficacy for correct condom use.

In a study of women attending an STD clinic, Posner et al.³ compared a group of

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women who reported a previous history of STD to clinic attendees without a previous STD history. The frequency of condom application by women significantly predicted the frequency of overall condom use, but only for those who reported a previous history of STDs. The proportion of the sample who applied condoms and the percentage of occasions on which they applied condoms were not reported.

Lastly, in a sample of commercial sex workers in Senegal,⁵ women reported greater initiative in the mechanics of condom use (supplying the condom, putting it on, and taking it off) after receiving an intervention. At baseline, 66.7% of sex workers "usually put the condom on" their male clients, whereas 93.3% "usually" did so at 2-year follow-up.

Some researchers have urged that women play a more active role in condom use⁶ and provided suggestions for eroticizing condom use.⁷ However, the body of available research remains sparse. A prior study by our research team⁸ reported on condom use errors and problems as reported by the women who applied condoms to their partner's penis that are included in this report. Potential differences in characteristics between women who apply condoms and other sexually active college women were not examined. Accordingly, the purpose of this study was to assess the proportion of college women who apply condoms and/or how they might differ from other condom-using and nonusing sexually-active college women. Women were classified as condom users and nonusers, and the condom users were further subdivided into applicers, those who put a condom on their male partner at least once in the past 3 months, and nonapplicers, those who did not put the condom on their male partner. It was hypothesized that condom users (applicers and nonapplicers) would score as more erotophilic (having a more positive response to erotic stimuli) than nonusers, and applicers would score as more erotophilic than nonapplicers. Research has shown that more erotophilic individuals (those with more positive attitudes toward sexuality) are more likely to have engaged in certain sexual health practices such as obtaining and using contraception, more frequent breast self-examination, and more frequent gynecological examinations.⁹ People scoring in the more erotophobic direction have more

negative attitudes toward sex education, report being more uncomfortable discussing sexual matters, have more sex guilt, and are less likely to seek out sexual situations.⁹⁻¹¹ Also, based on previous research,^{12,13} it was hypothesized that condom users would be less likely to report being in sexually exclusive relationships.

METHODS

Study Sample

Seven hundred ten surveys were collected from women meeting the recruitment criteria of being age 18 or older. Questionnaires from 36 women (5.1%) were disqualified as they did not answer the question regarding whether or not they had had sex with a man (including vaginal, oral, or anal) in the past 3 months. One hundred forty-one women (19.9%) were excluded from these analyses as they indicated that they had not had sex with a man in the past 3 months. The remaining 533 (75.1%) compose the sample for this report.

Data Collection

The study protocol was approved by the institutional review board, human subjects committee. Participants were recruited from November 2000 through April 2001 from 2 sources at a large Midwestern university's main campus: undergraduate introductory health science classes and the introductory psychology subject pool. These classes attract students from a broad spectrum of the undergraduate population. Classes were selected in which no instruction on condom use had occurred. Recruitment was done by a research assistant, not the instructor, during health science classes and by announcement posted on the list of studies for the psychology pool. The study was described as a questionnaire, that would take 20-30 minutes, covering condom use experiences including condom use mistakes. Participation was voluntary, and no incentives were offered except as follows: students in the introductory psychology subject pool received a "credit" for participation in any number of studies during the semester, and this study was one option. They received credit whether or not they actually completed the questionnaire. Questionnaires were completed anonymously during class time in health science classes or in group sessions for those in the psychology pool. The first

page of the questionnaire was the study information sheet approved by the human subjects committee that stated that completion of the anonymous questionnaire indicated the person's consent to participate.

Measures

Sex was operationally defined in the questionnaire as "when a male partner put his penis in your mouth, vagina, or rectum (anus, butt)." The 50-item questionnaire assessed background variables, whether the student ever had an STD or had become pregnant unintentionally, number of male sex partners, frequency of sex with men, and details about condom use for sex including frequency of condom use, how often the woman applied the condom, and condom use errors and problems (reported in reference 8). The reporting period for the sexual behavior and condom use variables was the past 3 months. The 3 types of sexual behaviors (oral, vaginal, anal) and condom use for these behaviors were not assessed separately. All 3 of these behaviors performed without the use of a latex or polyurethane male condom are considered to be risk behaviors for STDs.¹⁴

Included was the 5-item version of the Sexual Opinion Survey (SOS)¹⁰ measuring erotophobia-erotophilia, the learned disposition to respond to sexual stimuli with negative-to-positive affect and evaluations. The level of agreement with statements is measured on a scale from 1 (strongly agree) to 7 (strongly disagree). This short form has been found to be a good predictor of total SOS scores for both women and men.¹⁰ The SOS has shown good test-retest reliability as well as construct and discriminant validity. Mean SOS scores were calculated with high scores representing a more negative (erotophobic) response to erotic stimuli, and ANOVA was used to compare the groups.

Data Analysis

Demographic/background variables, number of male sexual partners, frequency of sex, and SOS scores were compared across the 3 groups (appliers, nonappliers, nonusers). Frequency and consistency of condom use were compared for the 2 condom-using groups. ANOVA, chi-squared, Mann-Whitney U, and Kruskal-Wallis tests were used de-

pending on the nature of the data and are indicated in Table 1. Even when the non-parametric tests (Mann-Whitney U or Kruskal-Wallis) were used to assess differences in central tendencies in skewed distributions, mean and standard deviations are provided in the table for clarity. Logistic regression was used for multivariate examination of potential correlates of condom use (no vs yes) and condom application (no vs yes).

For condom users, condom use consistency was calculated by the percentage of times condoms were used for sex during the past 3 months (ie, the number of times condoms were used divided by the number of times sex occurred, multiplied by 100). The frequency of condom use and the consistency of condom use were compared across the 2 groups of condom users (appliers v nonappliers) using a Mann-Whitney U test as these data were not normally distributed. For appliers, how often they, rather than their male partners, applied condoms was assessed as follows: for each applier, the percentage of times when a condom was used and the woman put condoms on her male partner(s) was calculated (ie, the number of times she reported applying the condom was divided by the total number of times a condom was used, multiplied by 100). The overall group means are reported.

RESULTS

The 3 groups did not differ in race/ethnicity or sexual orientation. Ninety percent were white, 4.1% Black or African American, 3.0% Asian or Asian American, and 2.8% other races. These percentages are similar to those for the female undergraduate population at this campus. No group differences were found in whether or not they had ever had an STD or had ever become pregnant unintentionally.

Table 1 displays values and test statistics comparing the 3 groups of women. Of the 533 women, 19.1% (n=102) were classified as appliers, 41.3% (n=220) as nonappliers, and 39.6% (n=211) as nonusers. Of the 322 condom users, 31.7% were appliers. Appliers put the condom on their male partners on average 59.7% of the occasions condoms were used, with 37.1% doing so all of the time. Seventy-five percent of appliers put the condom on at least a quarter of the times condoms were used. Among appliers, the number

Table 1
Comparison of Data From Appliers, Nonappliers, and Nonusers

Variable	Users		Nonusers	Statistic	P
	Appliers	Nonappliers			
n	102	220	211		
Percent of sample	19.1	41.3	39.6		
Mean (sd) frequency of condom use in last 3 months ^a	14.6 (17.1)	9.3 (12.4)	—	M-W U = 8143.50	.001
Mean (sd) percentage of times condoms were used during sex ^a	71.9 (31.9)	70.8 (34.6)	—	M-W U = 10001.00	.747
Mean (sd) age, years ^{a,b}	19.2* (1.2)	19.5* (1.7)	20.8+ (4.7)	K-W χ^2 (df 2) = 21.36	<.001
Percent in sexually exclusive relationships ^b	62.7*	55.5*	72.5+	χ^2 (df 2) = 13.58	.001
Percent married ^{b,c}	0.0*	1.4*	4.8+	χ^2 (df 1) = 8.36	.011
Mean (sd) frequency of sex in last 3 months ^{a,b}	23.0* (23.5)	16.1+ (19.6)	21.3* (21.5)	K-W χ^2 (df 2) = 11.92	.003
Mean (sd) number of male sexual partners last 3 months ^{a,b}	1.5* (1.0)	1.4* (0.8)	1.1+ (0.5)	K-W χ^2 (df 2) = 22.49	<.001
Mean (sd) SOS (erotophobia-erotophilia) score ^{a,d}	3.9* (1.2)	4.2+ (1.1)	4.3+ (1.0)	F(2,530) = 5.59	.004

Note.

- a Means and standard deviations are presented for clarity, but nonparametric statistics (Kruskal-Wallis or Mann-Whitney U tests) were used to test group comparisons due to skewed distributions of data for these variables.
- b Within each variable, significant differences between groups are noted by the presence of different symbols in the superscripts next to the descriptive data. Groups that share a symbol did not differ from each other.
- c Because of the small expected value for these cells, the applier and nonapplier groups were combined yielding a user versus nonuser comparison and a Fisher's Exact test significance level is reported.
- d Higher scores are more erotophobic. Lower scores are more erotophilic.

of times the woman put the condom on her male partner was significantly correlated with the overall number of times condoms were used in the past 3 months (Spearman rho = .613, $P < .001$). Forty-five percent (45.3%) of condom-using women reported using a condom every time they had sex.

Comparing condom users (appliers and nonappliers) to nonusers, users were significantly younger, were less likely to be

in a sexually exclusive relationship or married, and reported a greater number of sexual partners in the last 3 months. A logistic regression analysis was performed with condom use (no vs yes) as the dependent variable and age, race (white vs nonwhite), currently in a sexually exclusive relationship (no vs yes), more than one male partner in past 3 months (no vs yes), frequency of sex in the last 3 months (up to 12 times vs 13+ times; see footnote

1 below), and SOS score as independent variables. Lower age ($B = -.217$, $S.E. = .057$, $Wald = 14.280$, $df = 1$, $P = .000$, $Exp(B) = .805$, 95% C.I. for $Exp(B)$.719 - .901) and having more than one male partner ($B = 1.409$, $S.E. = .333$, $Wald = 17.913$, $df = 1$, $P = .000$, $Exp(B) = 4.094$, 95% C.I. for $Exp(B)$ 2.131 - 7.863) were significant independent predictors of condom use.

Only 2 significant differences were found between applicers and nonapplicers. Applicers had lower SOS scores than those of both nonapplicers and nonusers. It should be noted that the mean scores for all groups were quite close to the 4.0 midpoint of the SOS scale. Applicers also had a higher frequency of sex in the last 3 months than did nonapplicers, but were not different from nonusers. There were no differences between applicers and nonapplicers in condom use consistency (the percentage of times a condom was used), and condom use consistency was not significantly associated with the percentage of times a woman applied a condom (Spearman's $\rho = .035$, $P = .545$). A logistic regression analysis was performed on the data from condom users with applicer (no vs yes) as the dependent variable and age, race (white vs nonwhite), currently in a sexually exclusive relationship (yes vs no), more than one male partner in past 3 months (no vs yes), frequency of sex in the last 3 months (up to 12 times vs 13+ times), and SOS scores as independent variables. Lower SOS scores ($B = -.282$, $S.E. = .118$, $Wald = 5.678$, $df = 1$, $P = .017$, $Exp(B) = .754$, 95% C.I. for $Exp(B)$.598 - .951) and having more frequent sex ($B = .835$, $S.E. = .254$, $Wald = 10.855$, $df = 1$, $P = .001$, $Exp(B) = 2.305$, 95% C.I. for $Exp(B)$ 1.403 - 3.789) were significant independent predictors of applying condoms.

DISCUSSION

Sixty percent of the sexually active women in this sample used condoms at

least once in the past 3 months. This prevalence of condom use falls within the wide range reported for college women using various samples and condom use assessments ranging from last intercourse (26%¹⁵ - 43%¹⁶), last 6 months (46%),¹⁷ to lifetime (93%).¹⁸ Nearly one third of condom-using women in this sample reported applying condoms to their male partners, and they reported doing so on average 60% of the times condoms were used. Given the older age and higher education level of the current sample, it is not surprising that the proportion of women found who applied condoms is somewhat higher than the 23% reported for African American adolescent females by Crosby et al.¹

Given that both applicers and nonapplicers reported similar and relatively frequent condom use (ie, about 70% of the times sex occurred), an important question emerges: would condoms have been used as frequently among applying women if they had not taken on the role of applying condoms on their partners? It is possible that some women may take the lead in sexual risk reduction activities to achieve equivalent levels of protection experienced by their counterparts whose partners always applied condoms on themselves, or it may be that applying women simply take over a task that would have been performed by their partners anyhow. Focus group data suggest that some women who apply condoms say they do so to make sure the condom is put on correctly, and applying women may have higher ratings of perceived self-efficacy regarding condom use,² but in one study, perceived self-efficacy for correct condom use was not associated with demonstrated skill in putting a condom on a penile model.¹ Overall, our previous research suggests that the quality and quantity of men's and women's reports of condom use errors are comparable.^{8,19,20} Future research could explore the factors motivating women to apply condoms including such things as relationship dynamics and perceived self-efficacy.

The findings regarding erotophilia-erotophobia (SOS scores) were intriguing. As hypothesized, applicers scored as significantly more erotophilic than nonapplicers. However, our hypothesis regarding differences between condom users and nonusers in terms of erotophilia was not supported in that there was not a

Footnote 1

Data on the frequency of sex was reported as a total for the past 3 months. Once a week sexual activity would total about 12 times. Fifty-four percent reported sex from 1-12 times and 46% reported more frequent sexual activity. So this has been used as the dichotomizing point. However, it is important to keep in mind that there is no way of knowing whether the sexual activity was distributed equally across the 3 month period or it occurred in clusters of activity.

significant difference in the scores of nonusers and nonappliers. Our hypothesis was based on findings indicating that erotophilia has been positively associated with a number of sexual health behaviors and negatively associated with discomfort with sexual matters⁹⁻¹¹ combined with our view that condom use is a sexual health behavior that may require some comfort in dealing with sex directly. Perhaps nonappliers and nonusers in this age-group are more similar on these dimensions than one might assume, especially when one considers the following: nonuse of condoms is more likely to occur as relationship duration increases, particularly if the relationship is presumed to be sexually exclusive. Nonusers in our sample were more likely to be in sexually exclusive relationships than were nonappliers. Couples often switch from condoms to other forms of contraception, or drop the use of condoms if they are using dual methods, as relationships continue as they may assess the risk of contracting STDs as reduced in such a situation. Such decision making may have little to do with erotophilic-erotophobic tendencies. Future research could explore more fully the relationship between attitudes toward sexuality (including erotophilia-erotophobia) and condom use in women using more detailed assessment of risk perceptions and sexual attitudes.

It is possible that condom application by women reflects some degree of nonadherence to traditional gender-role expectations relative to condom use.²¹ Further research could investigate additional characteristics of women who apply condoms compared to those who do not, as well as the gender norms and relationship dynamics associated with women applying condoms.

Limitations

This study represents a preliminary investigation on the topic of college women applying condoms and has the usual limitations regarding generalizability of a convenience sample with limited heterogeneity. The magnitude of the differences reported here in what is a fairly homogeneous sample of women from a Midwestern university are relatively small. Nevertheless, the high level of statistical significance of the findings suggests the importance of further exploration in more

diverse groups of women on the relationship of general attitudes like erotophilia-erotophobia on the role women play in condom application. Additionally, not knowing in advance what proportion of women apply condoms to their male partners, this study was designed to provide only a cursory examination of the range of potential correlates of the behavior. A further limitation is that, in order to avoid further lengthening the questionnaire, and based on CDC recommendations that condoms be used for oral, vaginal, and anal intercourse,¹⁷ "sex" was defined as any of these 3 behaviors. Therefore, it is not possible to assess condom use and condom application separately for these behaviors. A woman was considered a condom user if she indicated she had used a condom at least once for sex (as defined in this way) in the past 3 months. She was considered an applier if she indicated she had applied the condom at least once.

CONCLUSION

Condom-applying women may have more positive attitudes toward sexuality and engage in a higher frequency of sexual activity. The implications of general attitudes toward sexuality for condom application in women warrant further exploration in more heterogeneous samples. This study and previously published work on women applying condoms^{1-5,8} highlight the role women may play in condom use and condom application and underscore the importance of (1) further study on these behaviors and their correlates in women and (2) the potential benefits of condom use education for women as well as men that includes details of correct condom application. The findings also raise the question of whether interventions aimed at more general attitudes about sexuality may increase women's interest in, confidence about, and skills related to condom application.

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