Women’s Use of Dual Methods of Sexual Self-Protection

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ABSTRACT. In a sample of college women at two private universities, this study examined dual use of self-protective measures, i.e., simultaneous use of condoms for disease prevention and birth control pills for contraception. Those who were dual users of condoms and birth control pills were in newer relationships, were less committed to their current relationships, and perceived their partners as more likely to have HIV or other STDs, as compared to college women using condoms only, birth control pills only, or no method. Dual use was unrelated to personality or health and risk behavior. Rather, dual use reflected a pattern of sexual self-protection based on risk management associated with concerns about consequences of sexual activity, that is STDs and conception, and not with more distal factors.

KEYWORDS. Dual protection, STDs/HIV, condoms, college women

Sexually transmitted diseases (STDs) and unwanted conceptions are commonly occurring sequelae of sexual behavior for women. It is estimated that 1 out of 4 people in the United States contracts an STD by age 21 (Tanfer, Cubbins, & Billy, 1995). Nearly half of all women in the United States have had at least one conception by age 20 (Henshaw, 1993), and over 60% of conceptions occurring to women between 18 and 24 are unintended (Henshaw, 1998). Although unwanted pregnancy and STDs cannot be eliminated.
entirely, women can minimize the likelihood of these outcomes through consistent use of condoms and contraception. Recently, interest in the promotion of two methods of protection, one for conception and one for disease control, has increased; however, dual method use is still relatively uncommon. Two nationally representative studies have examined rates of dual use among women: 6.6% of a sample of 14 to 22 year olds reported dual use of condoms and birth control pills at last intercourse (Santelli et al., 1997), while 6.9% of a sample of 20 to 24 year old women reported using these methods in the last month (Piccinino & Mosher, 1998). Similarly, Frank, Poindexter, Cox, and Bateman (1995) reported that 6% of women attending family planning clinics used condoms in combination with other contraceptive methods.

Considerable research has been conducted to address factors that influence self-protection against STDs (e.g., Bryan, Aiken, & West, 1997; Gerrard, Gibbons, & Bushman, 1996; Breakwell, Millward, & Fife-Schaw, 1994) and conception (e.g., Adler, Kegeles, Wibbelsman, & Irwin, 1990; Peterson, Oakley, Potter, & Darroch, 1998), but these two potential consequences of sexual behavior have infrequently been the focus of joint analysis. The present research is an exploratory examination of users of dual self-protective methods, that is, women who report using more than one method to avoid STDs and conception. The study used a convenience sample of college women and compared characteristics of those using condoms, those using oral contraceptives, those using both methods, and those using no method for self-protection at their most recent intercourse.

Although condoms provide protection against both pregnancy and disease, their failure rate as a contraceptive method renders them less desirable than other methods for pregnancy prevention. Indeed, in a nationally representative study of sexually experienced unmarried women (National Survey of Family Growth), of those who used condoms only 4% were motivated to do so exclusively for contraceptive reasons, whereas 66% reported that they used condoms for disease prevention only (Anderson, Brackbill, & Mosher, 1996).

Moreover, other features of condoms may make them unappealing to potential users for either disease or pregnancy protection, including the perception that condoms interfere with sexual pleasure or can be a source of embarrassment (Helweg-Larson and Collins, 1994). In addition, Amaro (1995) pointed out that women cannot unilaterally decide to use male condoms, but must convince a male partner to do so. Women’s traditional gender roles and the power differential between partners may make this task difficult.

Research has shown that condoms are frequently used early in sexual relationships, however as the relationship continues, the use of more effective birth control methods becomes more likely, while condom use and its STD
protection decreases (e.g., Plichta, Weisman, Nathanson, Ensminger, & Robinson, 1992; Reisen & Poppen, 1995). If the partner relationship is exclusive, both partners are HIV and STD negative, and there are no other risk factors, this pattern of behavior may be adequate for self-protection against pregnancy and disease. However, many women who are at risk both for conception and STDs take action to prevent pregnancy, but do not use condoms consistently for disease protection. For example, CDC (1996) reported that in a sample of women at risk for HIV due to their own behavior or the behavior of their partners, nearly 75% of those who were sterilized or using hormonal contraception did not use condoms with primary partners and about half did not use condoms with casual partners.

Thus, it appears that women’s preventive behavior is typically driven more by motivation to avoid conception than by concerns about disease. Moreover, Beckman, Harvey, and Tiersky (1996) found a negative relationship between intended pill use and intended condom use among college women. Their interpretation of this finding was that for college students, the decision to use these methods is an “either-or choice” (p. 249). Although people recognize that condoms carry the additional benefit of minimizing STD transmission, the behavioral evidence of a dichotomous choice implies that college women view condoms and the pill as alternative contraceptive choices which serve the same purpose. This may explain why prevalence rates for dual use of condoms and birth control pills are so low.

What are dual users like? What motivates some women to use a contraceptive method and also to use condoms for STD/HIV protection? The present study examined whether women who used dual methods of protection (condoms plus oral contraceptives) differed in a variety of psychosocial domains from women who used only condoms, only oral contraceptives, or no method of protection. Are women who are dual users cautious in general? Do they perceive greater risks of STD and HIV? Are they less familiar with their partners? This exploratory study addressed these questions as possible routes to understanding dual method use.

**PSYCHOSOCIAL DOMAINS**

*Perception of risk.* How individuals perceive the risks associated with sex may influence choice of contraceptive and disease prevention methods. Several theoretical models have posited that the perception of one’s own risk from a particular threat is a factor that motivates an individual to adopt self-protective behavior in order to avoid that threat (e.g., the Health Belief Model (Becker, 1974), the Transtheoretical Model of Change (Prochaska & DiClemente, 1986), Protection Motivation Theory (Rogers, 1983)). Although there are mixed results (Gerrard et al., 1996), some studies have found that
those individuals who believe they are at greater risk for STDs are more likely to use condoms (Reisen & Poppen, 1999).

In addition to perception of one’s own risk of unwanted sexual outcomes, an individual may also be influenced by an assessment of the risks associated with specific sexual behaviors (Poppen & Reisen, 1997). Therefore, we examined whether women using condoms, pills, both, or no method differed in their perception of risk. We expected that those women who perceived greater risk of sexually transmitted diseases, including HIV, would use condoms either alone or in conjunction with another method.

**Relationship factors.** Previous research has shown that sexual self-protection is influenced by characteristics of the partner relationship. For example, condoms are used more consistently in less committed or shorter relationships (Buchanan, Poppen, & Reisen, 1995; Reisen & Poppen, 1995). Moreover, in a longitudinal study of college women, Reisen and Poppen (1999) found that relationship characteristics and partner’s risk history were associated with the perception of health risk posed by that partner, which in turn was related to condom use one month later. Thus, we expected that characteristics of a relationship that promote the perception of risk of disease, such as non-exclusivity and lesser commitment, would be associated with higher levels of self-protection through condom use or dual method use.

**Health and risk behaviors.** Self-protective behaviors may be part of a cluster of habits that promote good health. Previous researchers have argued that many health and risk habits are not independent. Jessor, Dortovan, and Costa (1992) found that drug use and alcohol use covary. Similarly, Zucker- man, Ball, and Black (1990) argued that individuals who seek adventure and sensation manifest this tendency in varied domains. In support of this view, Santelli et al. (1997) noted that dual users reported lower frequency of other risk behaviors such as using tobacco, drugs, or alcohol. Therefore, we examined whether women’s contraceptive and disease prevention choices were associated with other aspects of lifestyle that promote health and minimize the likelihood of disease or injury. We expected that dual method users would be less likely to take risks and more likely to engage in activities to foster well-being.

**Sexual history.** Sexual self-protective behavior is also likely to be influenced by sexual experience. A number of studies have shown that condom use is more common for those with limited sexual experience, i.e., those with first partners or with fewer past partners (Reisen & Poppen, 1995; Gerrard & Warner, 1994). Therefore, we examined whether sexual history factors were predictive of precautionary behavior of dual protection, as well as condom use.

**Norms.** Normative factors can have a major impact on self-protective behavior: if significant others expect an individual to engage in a behavior,
then that behavior is more likely. Norms have been shown to be related to both intentions to practice safer sex (Basen-Engquist & Parcel, 1992) and condom use behavior (DiClemente, 1991). Therefore, we expected that women with strong normative expectations regarding condom use would be more likely to use either multiple methods or condoms alone.

Self-esteem. Self-esteem is one aspect of personality that has been shown to be related to risk-taking and self-protective behavior (Rosenberg, Schooler, & Schoenbach, 1989). Moreover, Adler and Hendrick (1991) found that college students with higher self-esteem were more likely to use contraceptives reliably. Thus, we expected that those with higher self-esteem would be more likely to use multiple methods of self-protection.

Overview of Study

College women who had a sexual partner in the past four weeks were asked questions about their recent sexual behaviors, their current partners, their perception of risk, as well as several other psychosocial domains relevant to self-protection. Women who reported use of both condoms and the birth control pills at most recent intercourse were compared to other sexually active women. Although women at most colleges are at relatively low risk for HIV, they are at much higher risk for STDs and are certainly at risk for conception, and thus are appropriate for inclusion in examination of dual methods of self-protection.

METHOD

Sample and Procedure

A questionnaire survey was administered to a convenience sample of female college students from two private, mid-Atlantic universities, one urban and one rural. In the current study, respondents were the 244 women who were involved in a sexual relationship or had had sexual intercourse in the previous 4 weeks. The analysis was restricted to those who were currently sexually active in order to minimize problems associated with inaccurate recall and retrospective reinterpretation of previous relationships.

Ages ranged from 18 to 23 years, with a mean of 19.7. The ethnic distribution, 75% white, 9% Asian, 8% African American, 3% Latino, and 5% other, reflects a combination of the diversity of the urban university along with higher proportion of white students at the rural campus. A limitation of the study is the use of a convenience sample that is not representative of all college women. The majority of the sample came from the private, urban
university, and therefore the results could be most safely generalized to similar college settings.

Data were collected from students in introductory psychology sections and sororities at the urban university and from sororities only at the rural university. Students in the sororities completed the questionnaires immediately after hearing a description of the study; those in classes returned questionnaires to the next session. Students in the classes received extra credit for their participation. In all cases, questionnaires were completed anonymously. The response rate was approximately 75 percent.

Measures

Self-protective method. Respondents were asked to list all methods used at their most recent intercourse for protection against conception or STDs, and were classified as using no method, condoms (either as a sole method or, in the case of a few women, in combination with spermicides), birth control pills, or condoms and birth control pills together. This last group was labelled dual users. Those respondents who used withdrawal (n = 5), depo-provera (n = 1), or a diaphragm (n = 2) were dropped from the analysis.

Risk perception. Respondents were asked two questions about the likelihood that their partners had an STD or HIV on 11-point probability scales from 0 = impossible to 10 = certain. Respondents were also asked about the risk of HIV transmission of six sexual behaviors (e.g., having intercourse with an HIV infected partner) on the same 11-point scale. An average of these six situations was computed as an index of perceived risk of sexual situations (Cronbach’s alpha = .74). Lastly, respondents were asked how effective condoms were for STD prevention or for pregnancy prevention on 7-point Likert scales (higher scores indicating greater efficacy).

Health and risk behaviors. Respondents were asked about the frequency of their engaging in a variety of nonsexual risk-related behaviors. Fourteen items were adapted from Arnett (1991) and included risky automobile experiences, drug use, criminal behavior, and being in unsafe situations. An index of risk behaviors was created by counting the number of behaviors that the respondent reported doing at all, thus higher scores indicated greater risk-taking.

In addition, respondents were asked on 7-point Likert scales about engaging in health promoting habits of exercise, diet, and sleep. A mean of these items was used as an index of health habits (Cronbach’s alpha = .70); high scores indicated more health promoting habits.

Sexual history. Respondents were asked about their sexual history with two items. These items concerned their age at first intercourse and the number of previous sex partners.
Norms. The mean of two questions was used to measure the normative environment. Respondents indicated the extent (on a 7-point Likert scale) to which their sexual partner and their friends believed that condoms should be used the first time a couple has intercourse. High scores reflected greater support of condom use. Cronbach’s alpha was .64.

Personality. As a measure of self-esteem, respondents were asked to rate themselves on six domains (intelligence, physical attractiveness, competence, kindness, sensitivity, and personality) using 5-point scales. These items were averaged to produce a single scale of self-esteem. Cronbach’s alpha was .66.

Relationship. Respondents were asked a variety of questions regarding their relationship with their current primary sexual partner. A single item asked whether respondents believed their relationship was sexually exclusive (1 = yes, 0 = no): 90% were exclusive. The degree of commitment in the partner relationship was dichotomized as less committed (0) for those who reported no emotional attachment or merely “seeing” their partners, or more committed (1) for those who described their partners as “boyfriends” or the relationship as committed: 77% were committed. Also, respondents were asked how many months they had had a sexual relationship with this partner. Due to the skewness of the distribution, this was dichotomized into longer than a year (1) versus one year or shorter (0): 51% were in the relationship for over a year.

As a measure of certainty about knowledge of one’s partner, respondents were asked about their degree of certainty about various details of their partner’s sexual history (e.g., STD history, partner’s previous number of partners). Four Likert scale items (1 to 7, with 7 being greater certainty) were averaged to produce the scale. Cronbach’s alpha was .78.

Data Analysis Plan

To test our hypothesis, we compared dual users to the other three groups of women, that is, those using condoms only, birth control pills only, or no method. One variable, the perception of the risk of sexual activities, was normally distributed, and therefore we used parametric analysis of variance with that variable. Because the other variables were not normally distributed, we examined group differences with analyses using the SAS categorical modeling program (CATMOD) to perform non-parametric analyses. For the continuous variables, we used CATMOD to conduct non-parametric analyses of variance with planned comparisons and a response function based on means. For the dichotomous variables, we performed similar analyses (using CATMOD) including planned comparisons, but with a response function based on marginal probabilities (i.e., as is used in chi-square analysis).
RESULTS

The most frequently used method of self-protection at the most recent intercourse was condoms only (41%), followed by birth control pills only (31%). Twelve percent of the women used both condoms and birth control pills (dual users), and 16% used no method.

The first set of analyses concerned the risk perception variables (see Table 1). There was a significant effect of group on perception of HIV risk posed by the partner ($\chi^2(3) = 9.62, p < .05$) as well as on STD risk posed by the partner ($\chi^2(3) = 8.32, p < .05$). Planned comparisons showed that dual users perceived greater risk for STDs and HIV than pill users. Beliefs about condom efficacy in preventing STDs and conceptions, as well as perception of the risk associated with various sexual behaviors, did not differ by group. Analyses concerning sexual history revealed a significant difference among the groups in age of first intercourse ($\chi^2(3) = 11.57, p < .01$) (see Table 2). Planned contrasts indicated that those women using only condoms had their first intercourse at a later age than all other groups. There was no difference among groups, however, in another measure of sexual history, number of sexual partners.

**TABLE 1. Group Differences in Risk Perception Means**

<table>
<thead>
<tr>
<th>Variable</th>
<th>User Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>None</td>
</tr>
<tr>
<td>Condoms Prevent STDs (7-point item)</td>
<td>6.31</td>
</tr>
<tr>
<td>Condoms Prevent Conception (7-point item)</td>
<td>5.28</td>
</tr>
<tr>
<td>Partner Risk of STD ** (11-point item)</td>
<td>1.28&lt;sup&gt;ab&lt;/sup&gt;</td>
</tr>
<tr>
<td>Partner Risk of HIV ** (11-point item)</td>
<td>1.12&lt;sup&gt;ab&lt;/sup&gt;</td>
</tr>
<tr>
<td>Riskiness of Sex Activities (11-point scale)</td>
<td>6.28</td>
</tr>
</tbody>
</table>

Note. Means in the same row that have the same superscript are not significantly different at $p < .05$. Significant effects for User Groups: * $p < .10$; ** $p < .05$; *** $p < .01$
TABLE 2. Group Differences in Sex History Means

<table>
<thead>
<tr>
<th>Variable</th>
<th>User Groups</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>None</td>
<td>Condom</td>
<td>Pill</td>
<td>Dual</td>
</tr>
<tr>
<td>Age of First Intercourse</td>
<td>16.3&lt;sup&gt;b&lt;/sup&gt;</td>
<td>17.3&lt;sup&gt;a&lt;/sup&gt;</td>
<td>16.6&lt;sup&gt;ab&lt;/sup&gt;</td>
<td>16.4&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>Number of Sexual Partners</td>
<td>4.58</td>
<td>3.98</td>
<td>4.99</td>
<td>4.82</td>
</tr>
</tbody>
</table>

Note. Means in the same row that have the same superscript are not significantly different at \( p < .05 \).

Another set of analyses examined group differences in relationship characteristics (see Table 3). There was a significant difference in the duration of a relationship \( (?^2(3) = 20.67, p < .0001) \), with shorter duration for dual users than for users of the other methods. There also was a significant effect in relationship commitment \( (?^2(3) = 20.00, p < .0005) \). Women who were using birth control pills reported greater commitment in their relationships than dual users. Finally, there was an effect for certainty \( (?^2(3) = 11.93, p < .001) \) with pill users expressing greater certainty of knowledge about their partners than the dual users.

We found highly significant effects of group on norms \( (?^2(3) = 68.11, p < .0001) \), with condom users reporting the greatest normative support for condom use at first intercourse with a given partner, and with pill users reporting the least. Contrasts also revealed that dual users were significantly more supportive of condom use than those who used the pill or no contraception.

No group effects were found for health and risk behavior variables or for self-esteem.

**DISCUSSION**

Although public health officials have encouraged dual methods of self-protection for those who are at risk of sexually transmitted diseases and unwanted pregnancy, we found that use of dual methods was not very common in a college sample. The incidence of dual use found in this study (12 percent) was higher, however, than the approximately six percent reported by nationally representative studies (Santelli et al., 1997; Piccinino & Mosher, 1998) and in a clinic sample (Frank et al., 1995). The overall pattern of self-protection found here supports the contention that college women tend to make an “either-or” choice about condoms and birth control pills (Beckman
et al., 1996). Nearly three quarters used one method or the other, while only 12% used dual methods of protection.

Given the promotion of dual methods by health educators and the low incidence of dual use, it is instructive to understand circumstances under which dual use occurs. What psychosocial factors are associated with dual use? In what context is dual use practiced? This study found that dual users differed from women using single or no methods of self-protection in their relationships. Most dramatically, dual users tended to be in new relationships: only 20% of dual users were in relationships that had lasted more than one year, whereas about half of those using condoms or no methods and two-thirds of those using the pill were. Moreover, women using a combination of the pill and condoms reported less commitment to their relationships than did those women who were using the pill alone. Given that there tends to be less commitment in shorter relationships, this finding concerning commitment was consistent with the finding concerning relationship duration. Thus, for women who use the pill, the decision also to use condoms occurs in shorter, less committed relationships.

In addition, we found that women using dual methods perceived their partners as having greater likelihood of being infected with HIV than the

TABLE 3. Group Differences in Relationship Characteristics, Means and Percentages

<table>
<thead>
<tr>
<th>Variable</th>
<th>User Groups</th>
<th>None</th>
<th>Condom</th>
<th>Pill</th>
<th>Dual</th>
</tr>
</thead>
<tbody>
<tr>
<td>FEELING (7-point scale)</td>
<td></td>
<td>4.39</td>
<td>4.31</td>
<td>4.41</td>
<td>4.32</td>
</tr>
<tr>
<td>CERTAINTY *** (7-point scale)</td>
<td></td>
<td>5.80(^{ab})</td>
<td>5.85(^{ab})</td>
<td>6.28(^{a})</td>
<td>5.64(^{b})</td>
</tr>
<tr>
<td>COMMITMENT ** * (dichotomous)</td>
<td></td>
<td>84(^{ab})</td>
<td>79(^{ab})</td>
<td>94(^{a})</td>
<td>70(^{b})</td>
</tr>
<tr>
<td>LENGTH ** * (dichotomous)</td>
<td></td>
<td>53(^{a})</td>
<td>47(^{a})</td>
<td>66(^{a})</td>
<td>20(^{b})</td>
</tr>
<tr>
<td>EXCLUSIVE (dichotomous)</td>
<td></td>
<td>94</td>
<td>89</td>
<td>93</td>
<td>90</td>
</tr>
</tbody>
</table>

Note. Means and percentages in the same row that have the same superscript are not significantly different at \(p < .05\). Significant effects for User Groups: * \(p < .10\); ** \(p < .05\); *** \(p < .01\).
other groups did, although the average estimate of the likelihood was extremely low in the entire sample. In contrast, college women report much greater concern about the risk of pregnancy than the risk of STDs, and the vast majority use some contraceptive protection (Grimley, Riley, Bellis, & Prochaska, 1993), as we found. The findings of this study are consistent with theories that emphasize that self-protective behavior is motivated by risk perception (Becker, 1974; Prochaska & DiClemente, 1986; Rogers, 1983). Most sexually active young women perceive a high risk of pregnancy and use contraception to avoid that outcome. In contrast to pregnancy, which is seen as a relatively constant risk, perceptions of the risk of contracting HIV or another STD vary. When women perceive greater risk, they act to protect themselves from disease as well as conception.

This study also revealed some differences between those women who used condoms only and the other groups of women. Normative expectations appeared to influence condom use. Condom users reported that their partners and friends believed, more strongly than other groups, that the respondent should use condoms. In addition, sexual experience also played a role in that condom users reported that their first sexual intercourse occurred at a later age. Thus, in this college sample, condom users had been sexually active for a shorter period of time.

So what is the pattern of self-protection that emerges from these data? We believe that women may be dual users or condom users or pill users depending on the current circumstances of their sexual lives. There does not appear to be a personality profile of a “dual user,” rather women might use dual methods at times when it seems appropriate to the situation.

What are the contexts associated with women’s choices for self-protection? Early in their sexual histories, many college women use condoms for both STD and conception protection. After women have been in a relationship for a longer period of time, many abandon condoms for contraceptive methods that are more effective and convenient, such as birth control pills (Plichta et al., 1992; Reisen & Poppen, 1995). College women who have been sexually active for several years may come to depend on the pill for contraceptive protection in all their relationships. Moreover, these women may also use condoms early in new relationships, when they are less familiar with their partners and perceive a greater risk of STDs.

This pattern of risk management appears to be associated with concerns about consequences of sex, that is STDs and conception, and not with more distal factors. Personality factors such as self-esteem and general risk-taking propensities did not appear to influence this type of self-protective behavior: women with high self-esteem, or infrequent risk behaviors in general, were no more likely to be dual users than other women. Moreover, general health
habits concerning diet, exercise, and sleep were unrelated to type of sexual self-protection.

The results suggest that most college women are more motivated to protect themselves from pregnancy than from STDs, unless they have concerns about the risk of disease. Thus, risk management for conception is a constant concern for nearly all sexually active fertile women, whereas risk management for disease is a more variable concern. Because conception is a higher probability event than contracting HIV or most other STDs, college women tend to make decisions about self-protection based on a method’s attributes as a contraceptive. The birth control pill may seem ideal in many respects: it is highly effective, readily available, controlled by the woman, coitus-independent, and does not interfere with sexual pleasure. A second method may be used only when sufficiently high risk of disease is perceived.

A limitation of this study is that the sample was not representative of all women at risk for unwanted conceptions and STDs. However, it is important to examine college women, who are at risk for both outcomes. Further research is needed on diverse populations to determine whether this pattern of self-protective behavior is seen in other groups. Our results suggest that current contextual factors associated with the relationship with the partner may be more influential than more historical or constant factors, such as sexual history and personality.

REFERENCES


