Correlates of safer sex communication among college students

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Abstract:

The purpose of this study was to examine factors that are thought to promote communication about safer sex and HIV among college students in the United States of America and to determine the extent to which communication about safer sex is important in the use of condoms. A better understanding of factors associated with safer sex communication can be helpful in developing HIV and STD prevention programmes for college students. Following approval from the institutional review boards of the six participating colleges and universities, researchers collected data from a random sample of students. The study included participant responses if participants were 18–25 years of age, single and sexually active. For the sample of 1349 participants, the mean age was 20·6 years. Sixty-three per cent of the sample was female, 50·5% white, 42·3% African-American, and the remainder of other ethnic groups. Over 50% of respondents reported frequent condom use, with 28% noting that they used a condom every time and 30·6% reporting condom use almost every time they had sex. Only 9·6% indicated that they never used a condom. The results of hierarchical multiple regression analysis revealed that the perception of quality of general communication with parents, the perception of a partner's attitude towards communication, communication self-efficacy, and communication outcome expectancies, were associated with safer sex communication. However, the association between safer sex communication and condom use was weak, suggesting that other factors excluded from this study are important in determining condom use for this sample of respondents. The findings provide some implications for HIV interventions. Interventions that enhance self-efficacy and positive outcome expectancies related to communication about safer sex are likely to foster discussion with a sexual partner. However, they might not lead to actual condom use.

Keywords: social cognitive theory | self-efficacy | college students | condom use | sexual behavior | communication | sex-based communication | health education | nursing

Article:

INTRODUCTION

Discussing safer sex options with a sexual partner is now considered an important first step in any new sexual relationship. Indeed, HIV prevention programmes often include instruction on how to introduce the topic of HIV with a sexual partner and how to negotiate for condom use and other safer sex practices (Kelly 1995, NIMH Multisite & Prevention Trial 1997). Although the HIV literature is replete with studies assessing factors associated with condom use, few studies have focused on factors associated with safer sex communication. Information from such studies could increase our understanding of how individuals negotiate safer sex and the circumstances under which communication fosters safer sex practices. The purpose of this study, part of a larger study about HIV prevention practices of college students, was to examine factors that are thought to promote communication about safer sex and HIV and the extent to which communication of safer sex is important in promoting condom use.

BACKGROUND

In one of the few studies examining personal characteristics associated with safer sex communication, Basen-Engquist (1992) found that college students who reported higher levels of self-efficacy and more support from friends were more likely to express intentions to discuss and to actually discuss safer sex with their partners. Other investigators have likewise identified parental support as an important factor. For example, Whitaker et al. (1998) found that teens who talked with their parents about sex were more likely than those who failed to talk to their parents to report higher levels of sexual discussion with their partners. Shoop & Davidson (1994) found parental support enhanced college students' confidence in talking with sexual partners about AIDS.

Other investigators have documented contradictory findings on the influence of safer sex communication on condom use. For example, Basen-Engquist (1992) found that neither the participants' feelings of self-efficacy for discussion nor their actual amount of discussion about safer sex options was related to their condom use. O'Leary et al. (1992) found that, contrary to their hypothesis, college students who felt more self-efficacious about discussing safer sex with their partners were no more likely to use condoms than those who expressed low levels of self-efficacy.

Yet, the findings of other studies seem to indicate that safer sex communication fosters the use of safer sex practices (DiClemente 1991, Catania et al. 1992, Malow et al. 1993, Catania et al. 1994, Rickman et al. 1994, Sheahan et al. 1994). For example, Catania et al. (1992) found that sexual communication was a consistent correlate of condom use across gender and sexual orientation among unmarried heterosexual and gay/bisexual adults. A subsequent study by Catania et al. (1994) revealed that health protective sexual communication was related to a greater commitment to use condoms among unmarried heterosexual adults who had a risk factor for HIV. In addition, other studies have associated communication with sexual partners about AIDS and obtaining information about a partner's sexual history with consistent condom use among incarcerated adolescents (DiClemente 1991, Rickman et al. 1994).

MODEL

For the present study, we developed a conceptual model based on empirical findings and the social cognitive framework (Bandura 1986, 1997). First, based on theory and empirical findings, we hypothesized that self-efficacy (confidence in the ability to communicate about safer sex) and outcome expectancies (outcomes associated with safer sex communication) regarding communication about safer sex would be directly related to actual safer sex communication with a partner. Given the apparent role of parents and friends in promoting safer sex discussion, we further proposed that both the quality of communication and the extent of sex-based communication with parents would influence self-efficacy and outcome expectancies for communication with a partner. We believed that the perception of a partner's attitude towards communication would be directly related to both communication self-efficacy and outcome expectancies. The conflicting findings about the relationship between safer sex communication and condom use made a directional hypothesis about the nature of this association difficult to propose. However, because this relationship is an important one to understand, we tested the statistical null hypothesis that no relationship exists.

METHOD

Procedures

The institutional review boards of the six participating colleges and universities approved the study as the first step in this research. Upon receiving approval, we requested the registrar's office of each institution to select a random sample of students who were enrolled in a degree programme and under the age of 25. We checked the addresses for completeness and included

only those students with a complete local address in the final sample. Each student received a survey with a cover letter describing the study and providing the elements of informed consent. This letter asked students to complete the survey and return it to a central location on campus. Students who returned surveys received the choice of a $5·00 coupon or a chance to win a certificate redeemable in an amount up to $100·00 at the campus bookstore. Students who failed to return a survey within 4 weeks received a reminder postcard.

Sample

Of a total of 8529 distributed questionnaires, 4·8% were returned unopened because of wrong or insufficient addresses, and 2044 useable questionnaires were returned with responses, representing a 25·2% adjusted response rate. For the present study, we limited the analysis to participants between the ages of 18–25 who were single, reported having had sexual intercourse, and provided complete data (n=1349). For this sub-sample, the mean age was 20·6 (sd=1·77). Sixty-three per cent of the sample was female, 50·5% white, 42·3% African-American, and the remainder was composed of other ethnic groups. The sample was almost evenly divided among academic classes with 23% freshman, 20·2% sophomores, 28·4% juniors, and 28·4% seniors. The mean age at first vaginal intercourse was 16·6 years, mean number of partners in the last year was 2·1, and mean number of occasions of sex in the last 3 months was 13·9. Almost 59% of respondents noted that they used a condom every time (28%) or almost every time (30·6%) they had sex. Only 9·6% indicated that they never used a condom.

Measures

Safer sex communication

We measured communication about safer sex practices with a partner with a 7-item sub-scale of the Safe Sex Behaviour Questionnaire (SSBQ). In 1988, the Surgeon General sent a booklet, Understanding AIDS, to all households in the United States of America (US Department of Health & Human Services 1988). We derived items for the SSBQ from this booklet. Several studies have assessed the reliability and validity of the scale among college students (DiIorio et al. 1992). A factor analysis revealed five underlying dimensions, including one labelled safer sex communication. The total scale correlated in the predicted directions with measures of general risk-taking and assertiveness, providing evidence for construct validity (DiIorio et al. 1992). A subsequent confirmatory factor analysis validated the correspondence between the items and the five factors.

Because the present study sought to assess factors associated with communication of safer sex practices, we used only the communication sub-scale of the SSBQ in the present analysis. Participants rated each item on a 4-point never to always scale. For example, one item from the communication sub-scale stated: ‘I ask potential sexual partners about their sexual history’. Total scores for this sub-scale ranged from 7 to 28, with higher scores corresponding to higher levels of communication about safer sex. Cronbach's alpha for responses of participants in the present study was 0·76.

Condom use

We measured condom use using responses to the item ‘How often do you use a condom?’. Participants rated the item on a 5-point scale from never to every time.

Communication self-efficacy

We measured self-efficacy for safer sex communication with a 4-item sub-scale of a longer self-efficacy scale. Items for this sub-scale related to confidence in ability to discuss condom use and AIDS with a partner. The original scale consisted of 45 items based on Bandura's (1986) definition of self-efficacy. A panel of judges familiar with social cognitive theory and safer sex practices assessed content validity. The initial reliability computed for the 45-item scale using a sample of college students was 0·91. Using the results of a subsequent item analyses and an exploratory factor analysis, we reduced the number of items on the scale to 21. We then used the 21-item scale in data collection for the present sample of college students with the scale consisting of five factors. To determine if the sub-scales were distinct, we conducted a confirmatory factor analysis, which indicated that the items loading on the predetermined factors met our expectations. Each item on the scale was rated on a 10-point scale ranging from 1 not at all sure to 10 completely sure. This analysis included the four items that measure self-efficacy for safer sex communication. Total possible scores for this sub-scale ranged from 4 to 40, with higher scores indicating higher communication self-efficacy. For example, one item read: ‘I can discuss the importance of using condoms with any sexual partner’. Cronbach's alpha for the responses of participants in the present sample for the sub-scale was 0·84.

Communication outcome expectancies

We measured outcome expectancies related to safer sex communication with a sexual partner with an 8-item scale designed to assess beliefs about the self-evaluative and social outcomes associated with discussing safer sex with a partner. Bandura's (1986) definition of outcome expectancies — i.e. the outcomes expected for performing a selected behaviour — informed

items for the communication outcome expectancies scale. HIV prevention literature and the researchers' work in this area provided items for the scale which was reviewed by a panel of experts. We assessed the scale for internal consistency reliability among a sample of college students (alpha coefficients ranged from 0·74 to 0·87). Each item began with the stem phrase 'If I discuss safer sex with my partner…' which participants rated on a 5-point agree/disagree scale. For example, one item stated: 'If I discuss safer sex with my partner, I will feel that I did the right thing'. We reverse coded negatively worded items so that higher scores reflected more positive outcome expectancies. Total possible scores ranged from 8 to 40, with higher scores corresponding to more positive outcome expectancies. Cronbach's alpha for responses of this sample of respondents was 0·89.

Perception of sexual partner's attitude towards safer sex communication

We measured the perception of a sexual partner's attitude about discussing HIV risk and condom use with four items of an 8-item scale. A review of the literature on partner attitudes towards safer sex and the investigators' previous work provided items for the scale. Individuals familiar with safer sex practices, including communication about risk, reviewed the selected items. Following data collection, we conducted a confirmatory factor analysis that demonstrated that the items loading on two factors agreed with our conception — a communication factor and a condom use factor. Because the present study focused on communication about safer sex, we included the four items which measured the perception of a partner's attitude towards safer sex communication. Participants answered each item based on a 5-point agree/disagree scale. For example, one item from the communication sub-scale stated: 'My most recent partner expects us to discuss condom use'. Total possible scores for the sub-scale ranged from 4 to 20 with higher scores corresponding to a more positive perception of the partner's attitude towards discussing HIV risk and condom use. Cronbach's alpha for responses of the present sample of participants was 0·90.

Perception of quality of general communication with parents

We measured the perception of the quality of general communication with parents with a 5-item scale designed to assess the participant's perceived quality of general communication with parents. We selected items for the scale from a review of the literature, most notably the work of Barnes & Olson (1982) and Armsden & Greenberg (1987) and from a similar scale used by us in a study of parent–adolescent communication among 13–15-year-old adolescents. Each item is rated on a 5-point scale from 1 strongly disagree to 5 strongly agree, and reverse scored for negatively worded items before summing. Total possible scores ranged from 5 to 25, with higher scores corresponding to higher perceived quality of general communication. For example, one item from the questionnaire stated: 'You talk with your parents about things that are important to

you’. The previous version used to assess perceived quality of general communication with parents among 13–15-year-old adolescents demonstrated high internal consistency reliability (alpha=0·85). Cronbach's alpha for responses of this sample of participants was 0·91.

Sex-based communication with parents

We measured communication with parents about sex with a 5-item dichotomous scale in which participants indicated whether they had ever talked to their parents about sexual intercourse, AIDS, sexually transmitted diseases, pregnancy, and condom use. We added the number of affirmative responses to yield a total score, and higher scores corresponded to more sex-related communication. We assessed internal consistency reliability, and the computed value for this sample of responses was 0·83.

RESULTS

This study analysed data using the Statistical Package for Social Sciences, Windows Version 7·5 (SPSS 1996). Prior to regression analysis, we evaluated data for adherence to the assumptions underlying multiple regression: normality, homoscedasticity of residuals, and lack of multicollinearity (Kleinbaum et al. 1997). Because the eventual analysis required complete data on all participants, we conducted analysis on only participants who contributed data on all questions of interest. Preliminary analyses indicated that respondents who contributed complete data (n=1349) and those with partial data (n=180) were no different in age ($t(1527)=<1$, n.s.), race ($\chi2(4)=4·67$, $P=0·32$), or gender ($\chi2(1)=<1$, n.s.).

The first step in the analysis was to assess the relationships among the variables in the study (Table 1). Briefly, safer sex communication was significantly correlated with: condom use ($r=0·072$, $P=0·008$); communication self-efficacy ($r=0·417$, $P < 0·001$); communication outcome expectancies ($r=0·412$, $P < 0·001$); perception of partner's attitude towards communication ($r=0·480$, $P < 0·001$); perception of quality of general communication with parents ($r=0·121$, $P < 0·001$); and sex-based communication with parents ($r=0·189$, $P < 0·001$). We observed the strongest correlations with safer sex communication for perception of partner's attitude towards communication, communication self-efficacy, and communication outcome expectancies.

Table 1. Correlations among study variables

Variable	1	2	3	4	5	6	7
1. Condom use	–	0·072**	0·219**	0·204**	0·211**	0·039	0·062*
2. Safer sex communication		–	0·417**	0·412**	0·480**	0·121**	0·189**
3. Communication self-efficacy			–	0·437**	0·363**	0·139**	0·187**
4. Communication outcome expectancies				–	0·458**	0·166**	0·126**
5. Partner's attitude toward safer sex communication					–	0·151**	0·169**
6. General communication with parent						–	0·433**
7. Sex-based communication with parent							–

**$P < 0·01$; *$P < 0·05$.

Condom use was significantly correlated with communication self-efficacy (r=0·219, P < 0·001), communication outcome expectancies (r=0·204, P < 0·001), perception of partner's attitude towards communication (r=0·211, P < 0·001), and sex-based communication with parents (r=0·062, P=0·024). However, although significant, the correlations between condom use and safer sex communication (r=0·072, P=0·008) and sex-based communication with parents (r=0·062, P=0·024) were relatively weak.

We used hierarchical multiple regression analysis to test the hypotheses for this study. This type of regression analysis takes an iterative form. An initial simple model is followed by more complex models in which the dependent variable from the immediately preceding model becomes a predictor along with previous predictors (Cohen & Cohen 1983). The constructs in this path model can be conceptualized in three categories. First, communication variables dealing with others consist of two exogenous variables — perception of partner's attitude towards communication and perceived quality of general communication with parents — and one endogenous variable — amount of parent sex-based communication. The second group of variables measure the individual's communication self-efficacy and outcome expectancies. Each of the next two levels includes a single variable: first, safer sex communication and finally, self-reported frequency of condom use.

The results displayed in Figure 1 show that the perception of a partner's attitude towards communication and sex-based communication with parents contributed to communication self-efficacy explaining 15% of the variance. Perception of partner's attitude towards communication, perceived quality of general communication with parents, and communication self-efficacy contributed to communication outcome expectancies explaining 30% of the variance. Both communication self-efficacy and outcome expectancies were significantly associated with safer sex communication, explaining 24% of the variance. Finally, safer sex communication was related to condom use and explained 0·5% of the variance. Thus, the data supported all but two

of the hypotheses. The association between perception of the quality of general communication with parents and communication self-efficacy was unsupported, and the predicted association between sex-based communication with parents and communication outcome expectancies also failed to be supported.

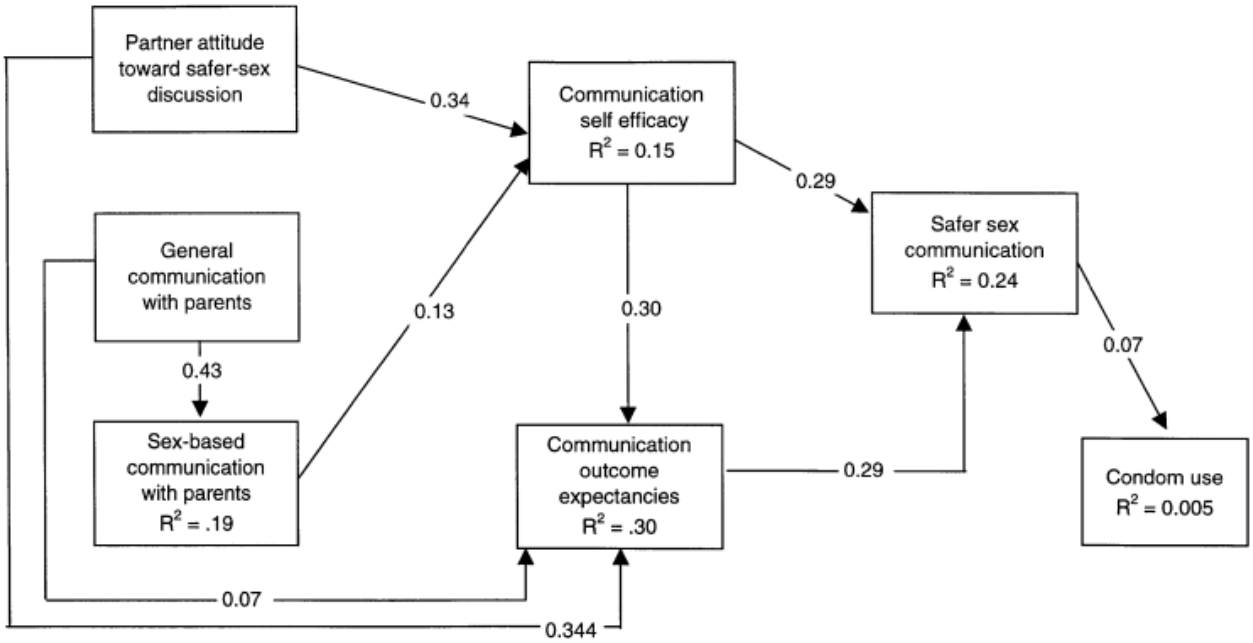

Figure 1. Hypothesized model of relationships among communication and condom use variables.

We estimated a second path model to test for omitted parameters (James et al. 1982). In this saturated model, all paths are estimated to determine if important paths were omitted from the original conceptualization. Figure 2 displays the results of the test of the saturated model with only significant paths shown. In addition to the paths which were significant from the proposed model, the following paths showed significance: (1) perception of partner's attitude toward communication and safer sex communication; (2) perception of partner's attitude towards communication and condom use; (3) communication self-efficacy and condom use; (4) communication outcome expectancies and condom use; and (5) sex-based communication with parents and safer sex communication with partner. The relationship between safer sex communication and condom use, which was positive and significant, reversed direction, becoming negative. However, it remained statistically significant.

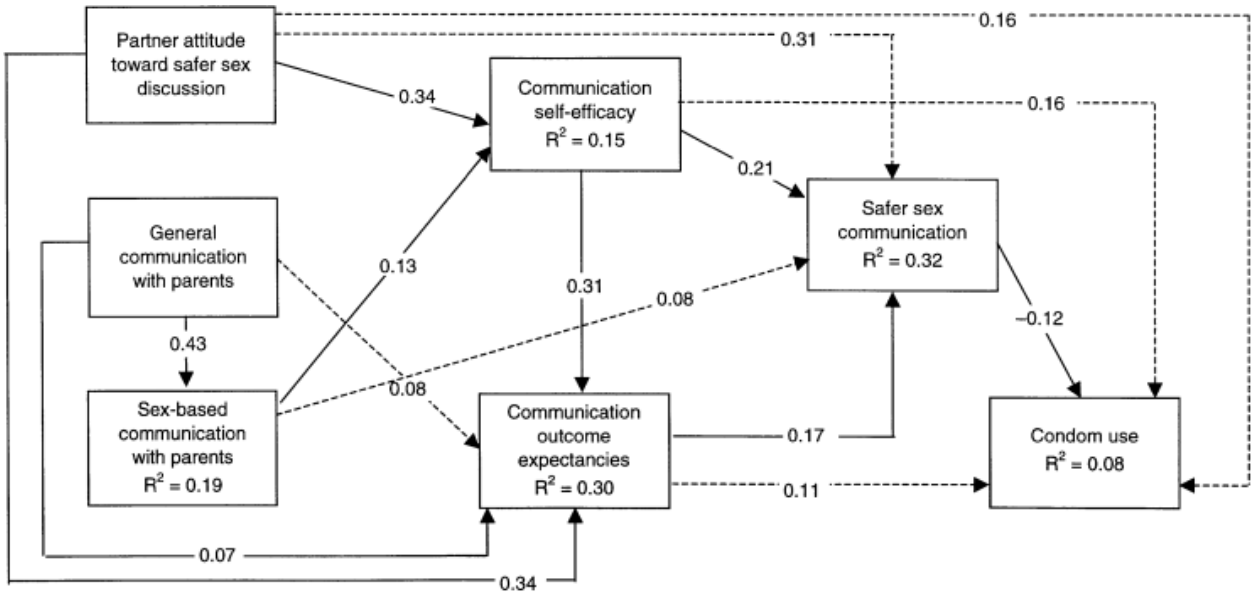

Figure 2. Fully saturated model of communication and condom use variables.

DISCUSSION

In this study, we found that safer sex communication self-efficacy and outcome expectancies were associated with actual safer sex communication. That is, participants who reported higher levels of confidence in discussing safer sex with their partners and expected more positive outcomes for doing so were more likely to discuss safer sex with their partners. By demonstrating a link between self-efficacy and safer sex communication, the findings of the present study validate those of Basen-Engquist (1992) who found that a higher level of discussion self-efficacy was related to both intentions to discuss and to actual discussion of safer sex with sexual partners. Demonstrating that communication self-efficacy influences actual communication of safer sex practices lends support to a major proposition of social cognitive theory — that a person's confidence in performing a behaviour is an important predictor of that behaviour.

The findings also demonstrated that expected outcomes associated with communication of safer sex have a bearing on whether safer sex is discussed. Thus, those who believed that their partner would be receptive to discussing protection were more likely to talk about their options for reducing HIV risks. In addition, the results of testing the full (saturated) model revealed that communication self-efficacy influenced condom use. This latter finding is similar to that of Shoop & Davidson (1994) who also found that communication self-efficacy has a direct effect on condom use.

In this study, participants who discussed safer sex with their partners were also likely to report condom use. This finding is similar to studies exploring the relationship between safer sex communication and condom use among adults (Catania et al. 1994) and incarcerated youth (DiClemente 1991). However, this association was very weak, with only 0·5% of the variance in condom use explained by safer sex communication. Moreover, the relationship changed directions in the saturated model. The saturated model shown in Figure 2 indicates a complex relationship among safer sex communication, condom use, communication self-efficacy, communication outcome expectancies, and partner attitude.

The negative relationship between safer sex communication and condom use was unexpected and deserves some comment. Partial correlation analyses (Kleinbaum et al. 1997), were used to investigate the relationship among three sets of variables: significant predictors of condom use in the saturated model (communication self-efficacy, communication outcome expectancies, and partner attitude); safer sex communication; and condom use. The results of this fine-grained analysis indicated that although this relationship is complex, one can say that safer sex communication shares aspects of communication self-efficacy, communication outcome expectancies, and partner attitude that are positively correlated with condom use (hence the positive path in the first model). However, when this shared variance is controlled through partial correlations, safer sex communication in and of itself negatively relates to condom use (less communication means more use).

This finding raises an interesting question regarding previous research that has used bivariate correlations to examine similar relationships, and it might point to a ‘talk as protection’ phenomena. Our study was conducted with a sample of college students. Perhaps for this group of individuals, safer sex communication itself may be viewed as a form of safer sex. Open discussion about sensitive topics such as sexual history may lead to inaccurate assumptions about a partner's risk of contracting sexually transmitted diseases including HIV. Furthermore, communication of safer sex may be substituted for more effective HIV risk reduction practices such as condom use. Additional research is required to understand how judgements about risk are developed and acted upon within intimate relationships.

The length of a relationship might be another important factor in determining condom use. College students in long-term relationships may abandon condoms as their commitment to each other increases and their concerns about contraction of disease decrease. Steady couples may choose alternative forms of safer sex behaviour related to birth control. Although they may have discussed safer sex options, these discussions may not lead to condom use. Further research should examine the association between relationship status and condom use.

The findings of this study also demonstrated that both parents and partners influence self-efficacy and outcome expectancies for communication. Participants who discussed sex with their parents and perceived that their partners were supportive of safer sex communication were more efficacious with regard to safer sex communication than their counterparts who either failed to discuss sex with their parents or failed to perceive their partners as supportive of such discussions. Participants who enjoyed a high quality of communication with their parents and partners in safer sex discussions held more positive outcome expectancies about safer sex communication.

The findings related to parental influence extend those of other researchers who have explored the parent–adolescent communication and sexual behaviour link (Fisher 1987, Leland & Barth 1993, Whitaker et al. 1998, DiIorio et al. 1999). Previous research has demonstrated that parent–adolescent communication fosters similar attitudes about sex. DiIorio et al. (1999), for example, found that adolescents who reported discussing a greater number of sex-based topics with mothers were more likely to express conservative attitudes about teens having sex than teens who reported fewer discussions. Such communication may also model ways in which the topic of sex can be broached and discussions about sex conducted for the adolescents. Thus, adolescents who have had such exposure may feel more certain that they can talk about sex with their partners. These results may help explain conflicting findings about the effect of parent–adolescent communication on condom use. The effect of the discussion may work indirectly through other variables such as self-efficacy.

Likewise, partners who are willing to discuss safer sex may provide an environment conducive to open communication, which, in turn, enhances confidence in the ability to discuss safer sex options and to expect positive outcomes associated with such discussions. Moreover, as shown in the saturated model, the attitude of a sexual partner towards communication of safer sex options seems to play an important role in influencing not only self-efficacy for communication but also has direct influence both on whether one discusses safer sex and on condom use itself. These findings are similar to those of Soet et al. (1998) and Harlow et al. (1993) who found that anticipated negative partner reaction affected safer sex behaviours of women.

Several programmes based on social cognitive theory have demonstrated that techniques used to enhance self-efficacy for using condoms actually increase condom use. Given the finding that communication self-efficacy is associated with safer sex communication, programmes developed to include guided mastery of discussion and positive outcome expectancies associated with

discussion and negotiation about safer sex would be likely to work. However, given the negative correlation between safer sex communication and condom use in the full model, care must be taken to caution students that discussion, while important for safer sex, is not a substitute for protective practices such as condom use. HIV prevention programmes could add more information about context of the relationship and situations in which condom use could be abandoned. Discussion about those issues within a HIV prevention programme might raise awareness and foster insight into the importance of using condoms.

Limitations

An important limitation of this study was the 25% response rate. This low response rate suggests that the sample might be biased in some respects and thus diminishes the ability to generalize the findings to a heterogenous group of college students. Understanding how the sample is biased could provide an indication of which college students could benefit most from the findings of this study. In an attempt to assess bias within our sample, we conducted additional analyses in which we compared the basic demographic characteristics of the sample separated by school to the population of the school from which the sample was selected. Using comparison tests, we demonstrated that the samples drawn from each school were similar in age, race and academic status to the larger populations. However, each sample had a greater proportion of female respondents than the population from which it was drawn.

A comparison of the total sample with all schools combined to national samples of college students surveyed in the National College Health Risk Behaviour Survey (Douglas et al. 1997) and the National Survey of Family Growth (Abma et al. 1997), revealed that the rates of sexual activity for both males and females were comparable. In addition to the gender bias, the respondents were also probably more interested in the content of the study or more motivated to respond to the survey. Although the sample is biased in these respects, the results of the study are consistent with the findings of other studies. It is likely that at least some of these findings could be replicated using other samples of college students. Nonetheless, further research is necessary to determine which relationships are invariant across groups and to enhance our confidence in these findings.

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