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A Brief, Low-Cost, Theory-Based Intervention to Promote Dual Method Use by Black and Latina Female Adolescents: A Randomized Clinical Trial

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HIV/AIDS disproportionately affects young women of color. Young women who use hormonal contraception are less likely to use condoms. Brief, inexpensive HIV-prevention interventions are needed for high-volume clinics. This study was a randomized clinical trial of two interventions: (a) a video made for this study and (b) an adaptation of Project RESPECT counseling. Four hundred Black and Latina teenage women completed a questionnaire about their sexual behaviors and were randomly assigned to (a) see the video, (b) get counseling, (c) see the video and get counseling, or (d) receive usual care. At 3-month follow-up, those who saw the video and received counseling were 2.5 times more likely to have used a condom at last intercourse with their main partner than teens in the usual care group. These differences did not persist at 12-month follow-up. This suggests that a brief intervention can positively affect condom use in the short term.

Keywords: *HIV; prevention; female adolescents; hormonal contraception; condoms; Latina; Black; sexual behavior*

The human immunodeficiency virus (HIV) and other sexually transmitted infections (STIs), in concert with high rates of sexual activity, pose a formidable risk to the health of adolescents, especially female adolescents (Centers for Disease Control and Prevention [CDC], 2000, 2002a). Young women, primarily young women of color, represent approximately 30% of new HIV/AIDS infections (National Institute of Allergy and Infectious Diseases, 2004); heterosexual contact is their leading risk behavior, accounting for 80% of new infections in Black women and 79% in Hispanic women (“Diagnoses of HIV/AIDS,” 2004). In 2000, among young people aged 13 to 19 years, a much greater proportion of HIV infections was reported among females (61%) than among males (39%) (CDC, 2002b). Furthermore, from 1984 to 1998, the number of HIV cases in young women acquired through heterosexual contact more than doubled (Lee & Fleming, 2001).

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Young women who use hormonal contraceptives are at elevated risk for HIV due to biological and psychosocial factors. The primary biological burden of risk stems from cervical ectopy, a normal condition of the cervix during adolescence and young adulthood, which is increased by hormonal contraceptives (Gottardi, Gritti, Marzi, & Sideri, 1984; Mosciki, Winkler, Irwin, & Schachter, 1989). Cervical ectopy is the presence of columnar epithelium on the ectocervix. It places the friable squamocolumnar junction on the ectocervix where it is in direct contact with sexually transmitted organisms.

Indeed, there is evidence that hormonal contraceptive use is associated with an increased risk of HIV infection. A 10-year prospective study of 1,498 female sex workers in Kenya included 248 women who seroconverted to HIV-1. Women were followed approximately monthly to bimonthly. The use of Depo-Provera and oral contraceptives was associated with a significantly increased risk of HIV acquisition (Sagar et al., 2004). Similarly, a meta-analysis of 28 studies found oral contraceptive use to be a significant risk factor for HIV transmission (Wang, Kreiss, & Reilly, 1999). However, the relationship between hormonal contraceptive use and HIV acquisition is not clear and further investigation is needed (Kiddugavu et al., 2003; Morrison et al., 2004; Mosciki, Ma, Holland, & Vermund, 2001).

Psychosocial risk behaviors stem from several sources. Developmentally, adolescent women may lack the cognitive and communication skills necessary to effectively negotiate for safer sex behaviors (Ammerman, 1995; Berenson & Wiemann, 1995; Roye, 1998). Even so, adolescent women who use hormonal contraceptives to prevent pregnancy are less likely to have male partners who use condoms than those who do not use a hormonal method (Roye, 1997). This behavior is consistent with findings that indicate that adolescents appear to regard the use of any contraceptive primarily as a measure to prevent pregnancy, not disease (Ammerman, 1995; Berenson & Wiemann, 1995; Roye, 1998; Roye & Seals, 2001). Yet, to prevent possible transmission of HIV or other STIs, these young women must negotiate consistent condom use with their male partners regardless of the nature of their relationship (e.g., long-term or casual).

In addition, although data from the Youth Risk Behavior Surveys suggest that dual method use (i.e., simultaneous use of condoms and of another method to prevent pregnancy) increased from 1991 to 2001, it remained low, at 7.2% in 2001 (Anderson, Santelli, & Gilbert, 2003). Therefore, interventions to promote condom use in this high-risk population are urgently needed. However, as financial considerations increasingly structure the operation of clinical settings, health care providers have less and less time for patient education, which is usually nonremunerative (Andreoli, Bentley, & Budetti, 1997). In addition, staffing and space limitations often preclude offering the multisession workshop-type interventions shown to be effective for adolescents (DiClemente et al., 2004; Jemmott, Jemmott, & Fong, 1992; Mullen, Ramirez, Strouse, Hedges, & Sogolow, 2002; Stanton et al., 1996). Finally, patients who come for clinic visits may not be interested in time-consuming interventions if they are not paid to participate, as they often are in research trials.

Therefore, to reach as many young women as possible with HIV education, effective brief interventions that are easy to implement in health clinic settings are needed. The goal of this project was to implement and evaluate two brief HIV-prevention interventions, used separately and together, that were designed for Black and Latina urban teenage women and can realistically be offered in clinical settings without undue financial or logistical constraints.

METHOD

The interventions were based on the results of our preliminary qualitative and quantitative studies of contraceptive use with male and female inner-city teens (Roye, 1997, 1998; Roye & Seals, 2001) and on programs reported in the literature that have successfully increased condom use (Kamb et al., 1998; O'Donnell, O'Donnell, San Doval, Duran, & Labes, 1998). The theoretical foundations for the study were Social Cognitive Theory (Bandura, 1989), the Theory of Reasoned Action (Marcoux & Shope, 1997; Shuman & Ham, 1997), and the Health Belief Model (Janz & Becker, 1984).

The study was a randomized clinical trial of three experimental conditions and of a usual care condition. The four arms of the study were as follows.

Arm 1: Counseling

The one-to-one counseling protocol was adapted from Project RESPECT, a brief, interactive counseling protocol that has been used successfully to promote HIV-risk-reduction behaviors in high-risk adult populations (Kamb et al., 1998). Here, the Project RESPECT counseling protocol was amended for one-session use with teens, and its HIV testing component was eliminated. A member of the original Project RESPECT team consulted on this aspect of the project. The amended counseling protocol took 15 to 20 minutes to complete and was done by clinic staff (health care assistants) whose usual duties included taking vital signs and assisting health care providers. The health care assistants had a high school education or some college. Clinic staff who did the counseling were given a 1-day training on implementing the counseling protocol.

The counseling sessions were client-focused and interactive and had an overall goal of negotiating a realistic plan for reducing STI risk, such as purchasing condoms, so that young women left the session with a concrete plan to reduce risk (see Table 1). Quality assurance was achieved by quarterly site visits by the former Project RESPECT team member to observe the counseling and to discuss the sessions with each counselor individually.

Arm 2: Video

Videos have also been effective at promoting safer sex behaviors (O'Donnell et al., 1998; O'Donnell, San Doval, Duran, & O'Donnell, 1995). The 21-minute video developed for this project was culturally sensitive, theory-based, and reflected the learning needs of the target population, as determined by prior qualitative and quantitative studies with Black and Latino teens from a similar neighborhood (Roye, 1997, 1998; Roye & Seals, 2001). Three important insights about condom use and nonuse had emerged from those studies that were incorporated into the video: (a) Many teens do not use condoms when they are protected from pregnancy by a hormonal contraceptive; (b) teens do not use condoms when they feel they can trust their partner; and (c) in response to the question, "Can you think of ways that we could help teenagers like you use condoms more regularly when they have sex?" the teens said that if they saw young women like themselves who were infected with HIV, they would take the threat more seriously (Roye & Seals, 2001). Thus, the video produced here featured two young HIV-positive women, one Black and the other Latina, and two young uninfected Black and Latino men. Three focus groups of minority adolescent women assisted with the final editing.

Table 1. Sample From Project RESPECT Counseling Protocol Amended for Teens

Goal	Protocol	Content
To engage the client in an initial exploration of her STI/HIV risk behavior	Assess client's level of concern about having/acquiring an STI/HIV Discuss client's STI history and behavioral changes in response to results	How concerned are you that you may be infected with HIV or an STI? Have you ever been evaluated for an STI/HIV? What changes have you made to reduce your risk of becoming infected with an STI/HIV?
To identify the client's constructive risk-reduction attempts, explore barriers toward behavior change, and provide understanding and support with regard to these issues	Review previous risk-reduction attempts Identify obstacles to risk reduction Role play, skill build, problem solve	Is there a specific time you remember when you practiced safer sex? Can you tell me about that time? What has been the most difficult part of reducing your STI/HIV risk?
To develop a specific, concrete, and incremental plan for the client to reduce STI/HIV risk	Identify a reasonable yet challenging incremental step toward changing the identified behavior	Imagine that I am your partner. What would you say to me about wanting to use condoms? Let's switch roles. I'll be you and you are your partner. Can you think of some small steps that you could complete in the next week that would move you closer to reducing your STI/HIV risk?
To assist the client in identifying resources that will enhance the client's ability to reduce risk and implement the risk reduction plan	Identify a person to whom the client feels comfortable disclosing the plan	Does anyone know you're at the clinic today? Could you talk to him or her about the plan? Who in your life is supportive of you?

The video was made up of two parts. In the first part, each of the two young women discussed her life and relationships. Then, each talked movingly about finding out she was infected with HIV, even though neither believed she was at risk. The women subsequently talked about how they became infected; for example, one stated that she stopped using condoms because she started using birth control pills.

In the second part, the young women and men individually responded to issues and barriers to condom use that were noted in the elicitation research and that addressed a construct from one of the three theories on which the project was based. The audience saw these issues on display boards and then the young women and men in the video responded to each. For example, the Health Belief Model proposes that individuals may not take health actions if they perceive important barriers to that action. A perceived barrier to condom use is a young woman's concern that if she asks her partner to use a condom, he will think she does not trust him. To address this barrier in the video, the audience sees a board that says "I can't ask him to use a condom. He'll think I don't trust him." One by one, the young women and men in the video respond to this and other questions and misperceptions that were noted in the elicitation research (see Royce & Hudson, 2003, for video details).

Study participants watched the video alone in a room and then contacted the research assistant when they were finished.

Arm 3: Video Plus Counseling

In this condition, young women first saw the video and then received Project RESPECT counseling.

Arm 4: Usual Care

In this condition, young women received usual care only.

By testing whether video followed by counseling is superior to either alone, the study also tested the Extended Parallel Process Model (EPPM). The EPPM proposes that a message that contains a "fear appeal" can be effective if it is followed by a self-efficacy message that gives the individual steps to take to reduce the health threat (Witte, 1995, 1997; see Discussion section).

Recruitment. Young women were recruited from Planned Parenthood sites in New York City, and Institutional Review Board approval was obtained from all participating institutions. Eligibility criteria included the following: sexually active female aged 15 to 21 years old; not currently pregnant; not known to be HIV-infected; currently using a hormonal method of contraception and planning to continue or about to start using one; self-identifying as Black or Latina; and able to speak and understand English.

Questionnaire. The questionnaire was based on the questionnaire used in Project RESPECT (Kamb et al., 1998) and a New York State AIDS Institute study of women (Krauss et al., 2000), but questions and wording were amended for use with this population and were pilot tested with Black and Latina teenage women for language and reading level. The questionnaire asked detailed questions about types of intercourse (vaginal, oral, and anal) and types of male partners (main, casual, and new). It elicited detailed information about the number of protected and unprotected sexual acts in which the young women have engaged with each partner type. Questions were limited to behaviors in the

past 2 months and at last intercourse. In addition, the questionnaire measured self-efficacy for condom use by asking about the likelihood of getting a partner to use condoms.

The questionnaire also included nutrition questions from the Growing Up Today Study, an offshoot of the Nurses' Health Study (Feskanich, Rockett, & Colditz, 2004), so that participants would not automatically assume that the video would be about HIV/AIDS. The video focus groups had made it clear that the effect of the video came from the shock of discovering that the healthy-looking women in the video were HIV-positive. However, if the questionnaire had only addressed sexual behaviors, the young women might have expected the video to deal with health threats posed by unprotected intercourse.

Data Collection. A Solomon-four-group design was used (Cook & Campbell, 1979). Research suggests that baseline assessment may affect outcomes in brief HIV-prevention interventions (Krauss et al., 2000). Indeed, feedback from focus groups of women who were helping design a survey to be used for HIV-risk assessment made it clear that some participants found the act of filling out the survey to be beneficial. They stated that it gave them an opportunity to review and think about sexual behavior and decision making (Krauss et al., 2000). Therefore, to evaluate the independent and joint contributions of baseline assessment and intervention on the outcomes being measured, 70% of the young women were randomized to receive the baseline questionnaire after signing consent and 30% were randomized to get no baseline questionnaire.

The software package, Questionnaire Design System© (QDS), was used to create the baseline questionnaire; those who were assigned to complete it did so using a Computer Administered Self Interview with Audio (ACASI). ACASI allows study participants to complete a questionnaire on a computer, thus providing maximum privacy, increasing recall reliability, and reducing social desirability bias (Kelley, Borawski, Flocke, & Keen, 2003; Kurth et al., 2004; Macalino, Celentano, Latkin, Strathdee, & Vlahov, 2002). In one study, ACASI not only increased levels of reporting of sensitive behaviors but decreased levels of reporting of preventive behaviors, that is, condom use (Macalino et al., 2002). Further, participants can choose to listen to the questions with a headphone, thus addressing the needs of low-literacy young women. Data were collected at baseline and 3- and 12-month follow-up.

Next, the participants were randomized into one of the four treatment conditions. Finally, after completing this phase of the study, the young women were asked to provide a urine sample for chlamydia testing. They were paid \$30 for their participation.

Follow-Up. The young women completed the ACASI questionnaire and were tested for chlamydia at both the 3-month and 12-month follow-up. They were paid \$40 for the 3-month follow-up and \$50 for the 12-month follow-up.

Early in the course of the study, the follow-up protocol included contacting young women 2 months after their participation to make an appointment to return for their 3-month follow-up. However, although we had addresses, phone numbers, cell phone numbers, and e-mail addresses for the participants, many were no longer working when we tried to contact them. Thus, because follow-up was low, we began making the follow-up appointment when participants were recruited. We gave them a date book and wrote the appointment in it, which increased follow-up rates.

Table 2. Group Ns at Three Time Points

Treatment Condition	Baseline (N)	3-Month Follow-Up (N)	% Attrition Between Time 1 and Time 2 ^a	12-Month Follow-Up (N)	% Attrition Between Time 1 and Time 3 ^b
Counseling	81	59	27	50	38
Video	88	56	36	36	59
Video + counseling	84	49	42	50	42
Usual care	84	49	42	51	39

a. Chi-square not significant.

b. Chi-square significant at .02.

Sample

Four hundred young women were recruited for the study. Of these, 221 (55%) returned for 3-month follow-up and 197 (49%) returned for 12-month follow-up. Forty-five percent were Black and 55% Latina. The age range was 15 to 21 years, with a mean of 18 years. At intake, 34% were using oral contraceptives, 14% were on Depo-Provera, 4% had Norplant, 2% had received a Lunelle injection, and 1 young woman was using an IUD. The remainder were about to start a hormonal method. Forty-seven percent had a history of pregnancy and 25% had had an STI. Forty-seven percent had used a condom at last vaginal intercourse with their main partner and 58% had used a condom at last vaginal intercourse with a casual partner.

The age at first vaginal intercourse ranged from 12 to 21 years, with a mean of 15 years. Ninety percent of participants had engaged in cunnilingus, 78% had engaged in fellatio, and 35% had engaged in anal intercourse.

Random assignment was tested to measure whether at baseline the treatment groups were equivalent by ethnicity, age, and condom use with main partner. The groups did not differ on these characteristics: ethnicity, $\chi^2 = 2.8$ ($p = .42$); age, $\chi^2 = 4.4$ ($p = .22$); and condom use at last vaginal intercourse with main partner, $\chi^2 = .5$ ($p = .92$).

Differential attrition by ethnicity and treatment condition were tested by chi-square. No differential attrition was found for ethnicity at Time 2 or Time 3, or by group at Time 2. However, differential attrition was found for group at Time 3. The video group lost more participants than the other groups. This is likely a chance fluctuation, because there were no between-group differences at Time 2, which was only 3 months after exposure to the video. If there had been something about the video that prompted young women not to return for follow-up, it would probably have been more apparent at Time 2 than Time 3. In the video and counseling group and the usual care group, there were one or two more participants at 12 months than at 3 months. That is because an attempt was made to contact all participants at Time 3 as well as Time 2, and a small number of girls returned at 12 months who had not come in for the 3-month follow-up (see Table 2).

RESULTS

The main outcome variable was condom use at last vaginal intercourse with main partner. At 3-month follow-up, young women who received only the video intervention or only the counseling intervention did not differ significantly on this outcome from young women in the usual care group. However, a chi-square assessing condom use by those

who received both video and counseling and the usual care group was significant at the .05 level ($\chi^2 = 3.46$). A logistic regression including assignment in one of these two groups (video plus counseling or usual care) as the independent variables, and condom use at last vaginal intercourse with main partner as the dependent variable, was significant at the .06 level and showed an effect size of 2.5. Young women who saw the video and then received counseling were 2.5 times more likely to have used a condom at last vaginal intercourse with their main partner at 3-month follow-up than teens in the usual care group. There were no between-group differences at baseline. From here on, the term *intervention group* will refer to those who received video and counseling, as there were no significant effects for either video or counseling alone.

However, at 12-month follow-up, there was no significant effect of the intervention, although a *t* test comparing young women who received both video and counseling with the usual care group found a directional trend toward more condom use at last vaginal intercourse with main partner ($p = .16$).

The effect of the intervention on other variables was also assessed: self-reported intercurrent STIs, positive chlamydia tests, belief that they would contract HIV in the future, number of casual partners, communication with partners about their sexual history, and self-efficacy for condom use as measured by response to the question: "How strongly do you feel about the following statement: 'I can get my partner(s) to agree for us to use a condom without any trouble.'" The Likert-type response categories ranged from 1 (*completely agree*) to 6 (*completely disagree*). A *t* test compared young women who received both video and counseling with those in the usual care condition on these outcomes. The only significant finding was that the intervention teens were significantly more likely, at 3-month follow-up, to report that they could get their partner to use a condom ($p = .05$), thus implying better self-efficacy for condom use. At 12-month follow-up, this difference persisted at the $p = .06$ level. We were unable to assess the effect of the intervention on number of casual sexual partners, as only 18% ($N = 40$) of the young women reported having a casual partner at Time 2, and 25% ($N = 48$) reported a casual partner at Time 3. There was no intervention effect on asking their main partner about whether he had been tested for HIV or about his STI history. Likewise, there was no intervention effect on condom use during anal intercourse. Having had the baseline assessment similarly did not affect outcomes.

To assess whether there was a differential effect of the intervention by age, young women in the intervention group and those who received usual care were dichotomized by age (younger teens = 15-17 years of age, older teens = 18-21 years of age) and then compared. Cross-tabulation at 3-month follow-up revealed that more of the younger intervention teens had used a condom at last vaginal intercourse: 79% of the younger intervention teens used condoms versus 50% of the younger usual care teens. This difference did not persist at Time 3. The difference between condom use in the two intervention conditions among the older teens at Time 2 was 39% (intervention group) versus 25% (usual care group). There were no differences at Time 3. Using chi-squares and Fisher's exact tests revealed that none of these differences reached significance. However, the *N*s were small ($N = 60$; see Table 3).

The data were also dichotomized by race/ethnicity. Although the number of participants for this question at Time 2 was too small ($N = 64$) to find a significant effect, when comparing those in the intervention group to those in the usual care condition at Time 2, 53% of the Latina intervention teens were using condoms compared with only 33% of those of the usual care teens. For Black women, the percentages were 53% and 43%,

Table 3. Percentage Who Used Condoms at Last Vaginal Intercourse, by Experimental Condition, Age, and Race/Ethnicity at 3-Month Follow-Up

	Older (18-21 years old)	Younger (15-17 years old)	Black	Latina
Video + counseling	39	79	53	53
Usual care	25	50	43	33

respectively. There were no significant differences between ethnic groups on condom use at Time 1.

DISCUSSION

The results of this study suggest that a brief, very low-cost video and counseling intervention to promote condom use among teens who use hormonal contraceptives can be effective at increasing condom use 3 months after participation. Although the regression testing this question was significant only at the .06 level, the effect size of 2.5 is encouraging. Of interest, self-efficacy for condom use was similarly increased in the intervention group.

The EPPM may explain these findings (Witte, 1995, 1997). According to this model, a fear appeal or risk message triggers two appraisals of the message that result in either an attempt to control the risk (a constructive outcome) or an attempt to control the fear (a nonconstructive outcome). The first appraisal is an assessment of personal relevance. The more the individual believes herself to be personally threatened, the more motivated she is to do the second assessment, which is an assessment of the efficacy of the recommended response (Witte, 1995, 1997). If the threat is perceived as irrelevant to that individual, she will ignore the fear message. If, on the other hand, the threat is perceived to be relevant, she will become frightened and motivated to take action. If the message is effective at increasing the individual's perceived self-efficacy to take action against the threat, and if she believes the action is effective, then she is more likely to adopt the recommended risk-reduction strategy (Witte & Allen, 2000). If, however, the individual does not believe she can take the recommended action, does not know what action to take, or does not believe that it is effective, she will be likely to take action to control the fear, rather than the risk, by denial ("It won't happen to me"), defensive avoidance ("This is too scary, I'm not going to think about it"), or reactance ("They're trying to manipulate me, I'm not going to pay attention"; Witte & Allen, 2000).

In this study, the video served to increase the personal relevance of the threat. Indeed, the focus group participants acknowledged that the video made them feel vulnerable to HIV (Royce & Hudson, 2003). Therefore, the video is, in essence, a fear appeal message. Although the video contains segments in which the young women and men talk about ways a young woman can get her partner to use condoms, this message may not have been heard by teens who were anxious over their realization that they are, in fact, at risk for HIV.

The teens who only received the counseling intervention may not have believed that the risk of HIV was personally relevant, so they did not integrate the counseling message. However, the young women who saw the video, which increased their sense of personal

susceptibility to HIV, and who then received counseling, which provided them with an action to take to decrease their risk, appeared more likely to heed the message of the intervention (i.e., it is important to use condoms even when one is protected from pregnancy).

The intervention was effective at improving the main desired outcome: condom use at last vaginal intercourse, despite the fact that it did not have an effect on some of the behaviors associated with adoption of safer sex behaviors (e.g., asking one's partner about his sexual and HIV history). This may lend further credence to the suggestion that the constructs of the EPPM were operant.

Analysis of 12-month follow-up data suggests that the intervention may have some very weak long-term effects but that booster sessions are needed. Because a goal of the study was to develop a brief intervention that can easily be implemented in a busy clinical setting, it would make sense to provide the intervention and booster sessions to young women when they come for reproductive health care. Patient charts could be tagged, so that the staff knows that a given patient has seen the video and been counseled and should have this intervention again when she returns for care, if more than 3 months have elapsed since her last intervention. Further studies should assess whether or not these booster sessions improve the long-term outcomes and the optimal timing of such sessions and seek the best ways to implement them during routine follow-up health care visits.

Although some multisession HIV-prevention interventions appear to have more pervasive effects (DiClemente et al., 2004; Jemmott et al., 1992; Stanton et al., 1996), those interventions may be difficult to implement with a broad population of teens because of the expense and difficulty of getting teens to participate. In addition, because promoting condom use by teens who use hormonal contraception is more difficult than promoting condom use by other teens (Roye, 1997), this intervention might be more effective with a broader population of teenage girls.

In addition, the intervention may have been more effective for Latina than Black teens, and for younger rather than older teens. In terms of ethnicity, the literature suggests that Black teens are significantly more likely to use condoms than Latinas (Grunbaum et al., 2002). Indeed, in this study at baseline, more Blacks (51%) than Latinas (46%) reported using a condom with their main partner at last vaginal intercourse, although the difference was not significant. Therefore, the Latinas may simply have had more room for improvement. It may also be that due to cultural constraints limiting frank discussions of condom use among Latinas (Peragallo et al., 2005; Roye, 1998), these women had had less teaching about and comfort with condom use. However, discussing their own condom use with the counselor during the counseling session may have helped to desensitize the issue of condoms and enable them to address condom use in their relationships. In addition, the video provides a role model for such discussions because the HIV-positive young women in the video, one of whom is Latina, candidly discuss their own condom use and how other young women can get their partners to use condoms. It is interesting that this ethnic differential has been found in other studies as well. An evaluation of an HIV-risk-reduction intervention for African American and Latina adolescent girls found that when the intervention effects were tested by ethnicity, on the outcomes for which there were ethnic differences, the Latinas did significantly better than the African Americans, even though the intervention contained components that had been specifically designed for African Americans (Jemmott, Jemmott, Braverman, & Fong, 2005).

On the other hand, the literature also suggests that younger teens are significantly more likely to use condoms than older teens (Grunbaum et al., 2002). This was the case in this study in which, at baseline, 59% of the younger teens (age ≤ 17) reported condom use with main partner at last vaginal intercourse, and only 40% of the older teens (age ≥ 18)

did so ($\chi^2 = 7.3, p = .005$). It is clear that in this instance, the older teens had more room for improvement, but they did not improve as much. However, relationship factors may have had an effect on these results. Older teens are likely to be in longer term relationships with their main partners, and the literature is clear that the longer the relationship between two young partners, the less likely condoms are to be used (Katz, Fortenberry, Zimet, Blythe, & Orr, 2000; Santelli et al., 1996). The salience of this factor may have overwhelmed intervention effects.

Limitations

This study has a number of limitations. First, the follow-up rate was low: 55% at 3 months and 49% at 12 months, although no differential attrition was found for age or ethnicity. Second, the results may not be generalizable to other populations of teens. Third, because the incidence of STIs in this population during follow-up was so low, as was the number of teens who had casual partners, the effect of the intervention on these variables could not be assessed. However, the literature on casual partners (as well as the results of this study) indicates that teens are more likely to use condoms with casual partners than main partners (Ellen, Cahn, Eyre, & Boyer, 1996). Because a primary goal of the study was to increase condom use with main partner, the paucity of casual partners did not affect the primary outcome of the study.

Implications for Practice and Research

This study raises several important issues for researchers and practitioners. First, contrary to the commonly held tenet of health education that a one-time intervention is not generally sufficient to change behavior, the results of this study suggest that a one-time, relatively brief intervention can, indeed, result in behavior change that persists for 3 months. And, although significant changes were not maintained over 12 months, there was a trend for better outcomes at that time point. This is crucial because a brief intervention can be implemented in a "real world" clinic or other setting, without unduly constraining the site's major activities or its budget. Therefore, interventionists should consider developing and testing other brief interventions that can be carried out in the settings where the target population is found, so that these interventions can benefit a much larger population. In addition, research is needed that elucidates factors associated with the best way to provide booster sessions and the optimal timing of such sessions.

In addition, the results of this study suggest that a fear appeals message can be effective when it is accompanied by an action message. This combination may be useful for interventionists who work in a variety of prevention areas.

CONCLUSION

The video and counseling intervention is an inexpensive (cost of video = approximately \$30), easily implemented protocol that is unique because it can be used in any clinical setting with minimal expense. The potential efficacy of this intervention is particularly noteworthy, as changing HIV-risk behaviors among sexually experienced youth can be more difficult than engaging in HIV prevention with teens who are not yet sexually active (Sikkema, 2002). The intervention may be more effective with that population.

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