Effectiveness of a Video-Based Motivational Skills-Building HIV Risk-Reduction Intervention for Inner-City African American Men

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Interventions to reduce HIV risk behavior have shown promise but have demonstrated inconsistent effects with heterosexual men. This article reports a cognitive–behavioral HIV risk reduction intervention designed for heterosexually active African American men. Men (N = 117) recruited from a public clinic were randomly assigned to either (a) a 6-hr video-based small group motivational-skills intervention or (b) a 6-hr video-based contact-matched HIV education comparison group. Results showed men in the motivational-skills intervention reported lower rates of unprotected vaginal intercourse and higher rates of condom use at the 3-month follow-up. However, because of increased condom use in the comparison condition, differences between groups dissipated 6 months following the intervention. These findings are among the first to demonstrate effects from a motivational-skills intervention for reducing HIV risk in men who have sex with women using a model designed to facilitate transferring prevention technology to community settings.

The HIV/AIDS epidemic continues to amplify, with over 600,000 cases of AIDS diagnosed and 40,000 to 80,000 new HIV infections reported each year in the United States. Without an effective preventive vaccine in the foreseeable future, behavioral risk-reduction interventions targeted to the highest risk populations offer the greatest hope for curtailing the spread of HIV. Fortunately, advances in behavioral interventions have shown promise in reducing HIV transmission behaviors and increasing preventive practices. Interventions that deliver educational and skills-building experiences to small groups have demonstrated success with men who have sex with men, as well as with women, adolescents, and adults with serious mental illnesses (NIH [National Institutes of Health] Panel, 1997). Scientific reviews and meta-analyses have shown that interventions grounded in theories of behavior change consistently reduce risk behaviors with effect sizes exceeding those of other health behavior interventions (Kalichman, Carey, & Johnson, 1996). These intervention models have also demonstrated cost-effectiveness (Holtgrave & Kelly, 1996).

Along with the success of theory-based interventions to reduce HIV risk behavior, there are notable gaps in the literature. Heterosexual men recruited from community settings, for example, are not among the risk populations for which behavioral interventions have been shown to be consistently effective. Interventions have been delivered least often to heterosexual men despite evidence that ethnic-minority men living in inner cities often lack accurate information about AIDS (Aruffo, Coverdale, & Vallbona, 1991; Kalichman, Belcher, Cherry, Williams, Sanders, & Allers, 1998), and the fact that the majority of women with HIV are infected by male sex partners. Indeed, the few studies that have tested cognitive–behavioral skills interventions tailored for heterosexual men have failed to consistently demonstrate positive outcomes (Branson, Ransom, Peterman, & Zaidi, 1996; Kalichman, Rompa, & Coley, 1997), arguing for an intervention model that motivates behavior change in men.

Heterosexual men are resistant to use condoms and are inclined to react negatively to requests for condom use by female partners (Chapman, Stoker, Ward, Forrutt, & Fahey, 1990). Men also lack motivation to use condoms because they do not view AIDS as a personally relevant threat and value the physical sensation of unprotected sex over the safety of condoms. These findings suggest that effective HIV risk-reduction interventions for men must enhance motivation to reduce risk behaviors in addition to educating and skills building. Carey, Maisto, Kalichman, Forsyth, Wright, and Johnson (1997) recently reported a motivational enhancement skills-building HIV risk reduction intervention for inner-city women. The intervention model was grounded in Fisher
and Fisher's (1992) Information–Motivation–Behavioral Skills (IMB) model of HIV preventive behavior change. Building on Miller and Rollnick's (1991) motivational interviewing for treating alcohol abuse, Carey et al. (1997) integrated elements of motivational enhancement into cognitive–behavioral skills building and demonstrated significant reductions in high-risk sex and increased use of condoms. Similar results were obtained in a brief motivational enhancement and skills building one-on-one counseling intervention for inner-city women (Belcher et al., 1998). Given men’s disinterest in condoms and lack of motivation to practice safer sex, we hypothesized that this intervention approach would result in significant reductions in risk behaviors among men who have sex with women.

HIV prevention interventions that have shown promise in the research literature have not been widely used by community service providers. For example, previous studies of community-based AIDS prevention service providers have shown that few have accessed theory-based interventions and that prevention science has made minimal contributions to prevention practice (Goldstein, Wrubel, Faigeles, & DeCarlo, 1996; Kalichman, Belcher, Cherry, & Williams, 1997), although the gap between prevention science and prevention practice is by no means unique to HIV/AIDS (Beutler, Williams, Wakefield, & Entwistle, 1995; Morrissey, Wandersman, Seybolt, Nation, Crusto, & Davino, 1997). Nevertheless, there is an urgent need for behavioral interventions that can be disseminated to and implemented by community service providers.

In the present study, we tested the effects of an HIV risk reduction intervention for African American inner-city men based on the IMB model with enhanced motivational components using techniques described by Miller, Zweben, DiClemente, and Rychtarik (1992) as adapted for HIV prevention (Carey et al., 1997). In addition, the educational, motivational, and skills-building components of the intervention relied on videotapes for implementation in an effort to increase the transportability of the intervention to community service agencies and health clinics. The intervention itself was delivered by community-based prevention service providers to further test its feasibility for technology transfer. Finally, we used an experimental effectiveness trial design to test the effects of the intervention against a contact-matched alternative HIV prevention intervention that represents the community standard of care for HIV prevention education.

Method

Participants and Setting

Participants were 133 African American men recruited from a county STD clinic to attend group sessions at a community center located in the zip code area of Atlanta with the highest AIDS case rates in the state of Georgia (Georgia Division of Public Health, 1996). Because the intervention context was tailored for heterosexual relations, men who reported only male sex partners in the 3 months prior to the baseline assessment (n = 16) were excluded from the data analyses. Participants were an average of 33.3 years old (SD = 9.0, range = 18–50). The mean years of education was 11.7 (SD = 1.9, range = 6–17) and 90% reported annual incomes under $20,000. Twenty men (17%) reported being in a relationship for 6 months or longer and 33% had children.

The sample demonstrated risk for HIV infection and other STDs. Eighty-two percent of the men had been treated for an STD, 71% exchanged sex for money or drugs, 16% had both male and female sex partners in the previous 3 months, 81% had been incarcerated, and 23% had a history of mental health treatment. Substance use was also common; 85% of the sample had used alcohol, 68% had used marijuana, 39% had used crack cocaine, and 3% had injected drugs in the past 3 months. In addition, 15% reported lifetime use of injection drugs and 25% had a sex partner who injected drugs. Nearly all men (94%) had been tested for HIV antibodies, with 50% testing HIV seronegative, 15% testing HIV seropositive, and 35% not knowing their test results.

Measures

Assessments were administrated using a group format to instruct participants in how to complete measures, familiarizing them with the format, and explaining item responses while allowing individuals to complete measures in privacy. This procedure walks participants through the measures, one page at a time, using overhead projection transparencies of assessments. The projected instruction of measures has been found effective in facilitating accurate responses to HIV risk assessments in low-literacy populations (Carey et al., 1997), and has demonstrated reliable responses (Kalichman & Stevenson, 1997). Assessors remained unaware of intervention condition assignments throughout the study. Measures included demographic information, AIDS-related knowledge, condom attitudes, HIV risk avoidance intentions, practice of risk reduction strategies, and sexual and substance use behaviors assessed at the 3- and 6-month follow-ups. In addition, group environment and perceptions of the group experience were assessed at the immediate postintervention assessment.

Demographic characteristics. Participants reported their age, ethnicity, HIV serostatus, employment status, current income, and highest level of education. Participants indicated whether they were in an exclusive sexual relationship for the past 6 months, and also reported whether they had been incarcerated, treated for an STD, treated for mental health problems, traded sex for money or drugs, had male sex partners, and injected drugs.

AIDS-related knowledge. A 10-item test was used to assess HIV risk and prevention-related knowledge. Items reflected information about HIV transmission, condom use, and AIDS-related knowledge, and responses were “yes,” “no,” or “don’t know.” Example items included “Can a woman give the AIDS virus to a man?” (yes), “Can you get AIDS by touching a person with AIDS?” (no), and “Do most types of birth control also protect against the AIDS virus?” (no). The AIDS knowledge test was scored for the number of correct responses. Items to which the participants did not know the answer were scored incorrect. The AIDS knowledge test was internally consistent (α = .73).

Condom attitudes. We used a seven-item condom attitudes scale adapted from Hewlig-Larson and Collins (1991). Items included: “The use of condoms can make sex more stimulating.” “Condoms are uncomfortable” (reverse scored), and “Using condoms can be pleasurable.” Participants responded on 4-point scales ranging from 1 (strongly disagree) to 4 (strongly agree). The scale was keyed so that higher scores represented more positive attitudes toward condoms. We found the condom attitudes scale to be reliable in the current sample (α = .66).

HIV risk-avoidance intentions. Participants indicated their likelihood to engage in nine actions to reduce HIV-related sexual risk. Participants were instructed to imagine a situation in which they might feel tempted or pressured to engage in unprotected intercourse with a person they desired and to respond to each risk-reduction intention item accordingly. Sample items included “I will keep condoms nearby,” “I will remind myself to use a condom during sex,” and “I will decide ahead of time what I will and will not be willing to do.” These items reflect cognitive and behavioral strategies often targeted by HIV prevention interventions (Kalichman, Carey, et al., 1996), including the current intervention. The items were anchored on 6-point scales from 1 (definitely will not do) to 6 (definitely will do). Responses were summed to provide a behavioral intentions score that was internally consistent (α = .89).
Risk-reduction strategies. Participants were asked at the 3- and 6-month follow-ups if they had practiced specific risk reduction actions since completing the intervention, including if they had refused unsafe sex, planned ahead to practice safer sex, discussed using condoms with a sex partner, and discussed issues concerning AIDS with a partner. These items were responded to on a yes-or-no format. Also, we asked participants to indicate how often they had used condoms on a 5-point rating scale: 1 = every time, 2 = almost every time, 3 = sometimes, 4 = almost never, and 5 = never.

Substance use and sexual behaviors. We assessed use of alcohol, marijuana, crack cocaine, and other drugs in relation to sexual encounters over the past 3 months. Using open response formats, participants reported the number of times in the past 3 months they drank alcohol and used other drugs before engaging in sexual activity (Catania, Gibson, Chitwood, & Coates, 1990). Assessing substance use in relation to sex for self and partners provides a more precise measure of the link between these two behaviors than does an assessment of global substance use over a given time period (Leigh & Stall, 1993). These measures were included in the baseline, 3-month, and 6-month assessments.

Participants also completed measures assessing their sexual activity in the past 3 months including numbers of partners and frequencies of unprotected and protected vaginal and anal intercourse. Open-ended formats were used to increase response accuracy. The proportion of intercourse occasions protected by condoms was also calculated using the ratio of protected sexual intercourse occasions divided by the sum of unprotected and protected intercourse occasions. We also asked participants whether they were carrying condoms with them at the 3- and 6-month follow-ups. Measures of sexual behaviors similar to these have acceptable validity and reliability (Catania et al., 1990; Kauth, St. Lawrence, & Kelly, 1991). For example, using these same measurement formats, Kalichman and Stevenson (1997) reported 2-week test-retest reliability coefficients of .78 and .65 for unprotected and protected vaginal intercourse, respectively. We also attempted to reduce response bias by using self-administered anonymous procedures, equalizing potential demand characteristics across conditions, and keeping assessment staff masked to treatment conditions.

Group experience and participant satisfaction. To assess differences between intervention conditions in terms of group experience and satisfaction, participants completed three measures of the group experience at the end of the intervention sessions. First, a seven-item assessment of group environment was administered; example items included “There was a feeling of togetherness in the group,” “I felt comfortable in this group,” and “The people in the group understood each other” (α = .93). Participants also completed five items concerning perceptions of the intervention videotapes; example items included “I felt that I could trust people in the tapes,” “The people in the videotapes knew a lot about AIDS,” and “I feel like I learned a lot from these tapes” (α = .87). Finally, five items evaluated group facilitators; example items included “The group leaders cared about men like me,” “I could trust the group leaders,” and “The group leaders cared about AIDS” (α = .94). Participants responded to items for all three scales using 4-point ratings ranging from strongly disagree (1) to strongly agree (4).

Procedure

Intervention development. The intervention content was developed in part from information obtained from persons in the community who were similar to men targeted by the intervention. Exploratory research was undertaken to determine perceived threat from HIV/AIDS, patterns and magnitude of risk behaviors, and the cultural and gender context for framing the intervention content. Men recruited from the community participated in focus groups, the results of which suggested that among an array of other serious social problems, concern about AIDS plagued inner-city men. However, participants stated that they rarely discussed contraception or STD protection with their sex partners and admitted that they would feel uncomfortable initiating such conversations. Survival, responsibility, respect, and self-esteem were clearly important values among the group members. These values were used to establish a context for the intervention conditions.

Recruitment and randomization. Participants were recruited from an STD clinic located in a county public health clinic. Men were approached for recruitment while they waited to see a clinician for either STD screening, STD treatment, or HIV antibody testing and counseling. Men were told about the study opportunity and, when interested, were scheduled for an initial assessment and intervention session. Of the men approached about the study opportunity, approximately 70% enrolled. Men were offered randomly generated time slots for group appointments. Those men who were unable to attend the first session were recontacted by the recruitment staff for rescheduling to the same condition. Thus, individuals were randomly assigned to conditions. Participants were provided informed consent prior to completing baseline measures. Assessment and intervention sessions were conducted at a community-based center that houses multiple social services.

Experimental and Comparison Group Interventions

Several elements were controlled across the experimental and comparison interventions. Group sessions consisted of 6 to 10 participants and 2 community-based service providers (1 man, 1 woman) who served as group facilitators. Both interventions were delivered in two blocks of 3-hr sessions. For both conditions, both sessions were delivered in the same week; either Monday and Wednesday or Tuesday and Thursday. This format provided sufficient time to deliver all intervention components and met the needs of the community-based agency that collaborated in this research. Participants were provided with snacks and lunch and received condoms after each group session. Finally, all participants were reimbursed $35 for completing the baseline assessment, $25 for the immediate postintervention assessment, and $30 for completing each of the 3- and 6-month follow-up assessments.

Motivational skills-building intervention. The HIV risk reduction intervention tested in this study was based on Fisher and Fisher’s (1992) 1MB model and included components from previous behavioral skills-building interventions (Kalichman & Hespers, 1997), and motivational enhancement techniques drawn from Miller et al.’s (1992) motivational interviewing as adapted for HIV risk reduction (Carey et al., 1997). The first session focused on educating men about HIV/AIDS and motivating behavior change. Following a brief introduction by the facilitators, the group viewed a 20-min videotape that provides basic information about HIV transmission risks, HIV disease processes, and prevention. The tape used a question-and-answer format, with African American men asking questions of an African American female AIDS educator. After viewing the tape, men participated in a discussion with questions and answers. Participants also received the first of three personalized feedback forms derived from their baseline assessment. The knowledge feedback form presented the participant’s responses to their baseline knowledge test, including the individual items, participants’ responses, and the correct answer to each. After the facilitators explained the purpose and format of the feedback, participants viewed a second videotape that presented excerpts from interviews with five African American men living at various stages of HIV/AIDS, again followed by a group discussion of how AIDS has affected African Americans. The third videotape was an 8-min rap music and comedy skit educational tape designed to elevate mood and entertain participants while reinforcing accurate information. Participants were given a second feedback form that focused on sexual risk for HIV infection, including their history of risk, number of sex partners, frequency of sex acts, and use of condoms. The first session ended after a brief discussion of the behavioral feedback form, a review of the session, and questions and answers.

The second session began with a brief review of the first session, where group facilitators initiated a discussion of ways to prevent HIV/AIDS, including the use of condoms. Participants were given the last feedback
form that provided their responses to the condom attitude measure collected at baseline. Condom attitudes were discussed, with items cast into a group activity in which participants sorted the attitudes into pros and cons of condom use. The negative aspects of condoms were used as examples for the decision-making/problem-solving skills component of the intervention. Participants were instructed in five steps of effective problem solving: goal setting, planning ahead, ensuring the availability of condoms, knowing options, and prioritizing strategies. Problem solving was followed by behavioral skills building for condom use. Participants first watched a 10-min videoclip that presented African American male and female health educators who displayed and explained condoms and related products, and used an anatomical penis model to demonstrate correct condom application. Following the tape, group facilitators again modeled the correct use of condoms using wooden penis models. Finally, participants were split into dyads to practice condom application, receiving feedback from their peers and the group facilitators. This activity was followed by a brief discussion of the barriers to using condoms and applying problem-solving strategies to address condom use barriers.

The final component of the intervention involved building sexual communication skills. Because our formative work, as well as previous research, indicated that heterosexual men are unlikely to engage in sexual role-plays with other men, we used clips edited from popular films to provide situations and scenarios for men to generate verbal responses to risky situations. Seven scenes were identified as "prelude to sexual encounters." All of the scenes were from PG- and R-rated motion pictures with African American men and women, including Boyz in the Hood (Singleton, 1991), Jason's Lyric (McHenry, 1994), Coming to America (Landis, 1988), and A Rage in Harlem (Boyle, Whitaker, Wooley, & Duke, 1991). Following a brief introduction by the facilitators to set up the scenes, the movie clips (2–3 min each) were shown. Scenes were stopped at points where participants were asked what the male character could say or do at that moment to create a safer sex experience. The movie clips therefore provided nontesting and realistic situations that men could identify with, generate verbal responses to, and receive feedback from peers and group facilitators. In addition, participants identified and applied problem-solving strategies to risk antecedents (triggers) and barriers to practicing safer sex in the scenes. The second session ended with men discussing plans for personal risk reduction and applying what they learned to their own relationships.

Video-based education comparison condition. The comparison condition in this study was a time-matched, alternative HIV prevention intervention that more closely resembles the standard of care in most community settings serving heterosexual men. The comparison intervention used four videotapes to deliver HIV prevention information: the questions and answers and the rap music—comedy skit tapes used in the motivational-skills intervention, a video that provided detailed information about HIV antibody testing, and a tape that discussed the importance of condoms. Participants in this condition did not practice condom application. The videotapes presented persons of diverse ethnic backgrounds, primarily African Americans, and were followed by group discussions, questions and answers, and access to information about HIV/AIDS, and HIV antibody testing.

Data Analyses

Prior to conducting the main study outcome analyses, a series of preliminary analyses were performed. First, we inspected all of the outcome variables for skewed distributions and outliers. Variables that were significantly skewed were transformed using the formula log_{10} (x + 1), as recommended by Winer (1971), with observed values presented in the tables. To test for differential attrition across conditions, we conducted a 2 (attrition: lost vs. retained) × 2 (condition: skills intervention vs. comparison) contingency table chi-square test. We also conducted attrition analyses following procedures described by Jurs and Glass (1971), where differences on baseline measures were tested using a series of 2 (attrition) × 2 (condition) analyses of variance (ANOVAs). In these analyses, a Condition X Attrition interaction would indicate differential loss between the skills intervention and the comparison group, and a main effect for attrition would demonstrate differences between participants lost and those retained. The main effects for intervention condition in this analysis would also provide information regarding the integrity of our randomization procedure. Finally, we conducted analyses to identify potential covariates for behavioral outcomes. An examination of the association between demographic characteristics and sexual risk behaviors indicated that participant age and education significantly correlated with intervention outcome variables. For example, age was inversely associated with condom use \( r = - .16, p < .05 \), and education was inversely associated with number of sex partners \( r = - .15, p < .05 \). Therefore, age and education were included as covariates in the main study analyses of covariance (ANCOVAs).

For the main study outcome analyses, we conducted 2 (condition) × 3 (assessment sessions) mixed-design ANCOVAs to compare intervention conditions on AIDS-related knowledge, condom attitudes, and behavioral intentions at the immediate postassessment and at the 3- and 6-month follow-up assessments, controlling for baseline scores, age, and education.

We also conducted tests for differences in sexual risk behaviors between groups on the 3- and 6-month follow-up data, controlling for baseline behavior, age, and education. Cohen’s \( d \) was computed with DSTAT software (Johnson, 1989) and was reported as an index of effect size for significant differences. Finally, differences between groups for having practiced risk reduction strategies at the 3- and 6-month follow-ups were tested with contingency table chi-square tests. For all analyses, cell sizes and degrees of freedom varied because of attrition and missing data.

Results

A total of 117 heterosexual active men enrolled in the study, completed baseline assessments, and were randomized to conditions. Ninety-nine (85%) men completed group sessions, with 96 (82%) completing 3-month follow-ups and 81 (69%) completing 6-month follow-ups. Of the men who did not complete the follow-ups, 7 were incarcerated, 8 had moved, and the remaining 22 could not be located. Attrition was proportional across conditions, with 10 (17%) men in the motivational-skills-building intervention and 9 (16%) in the comparison condition not completing the 3-month follow-up. \( \chi^2(1, N = 117) = 0.01, p > .10 \). To test for potential differential effects of attrition and the integrity of our randomization procedures, we compared men who were assigned to the motivational skills intervention \( n = 60 \) to those in the comparison group \( n = 57 \) on all demographic and outcome variables collected at baseline. Specifically, results from the 2 (attrition) × 2 (intervention condition) ANOVA failed to indicate any significant main effects or interactions (all \( ps > .10 \)). Therefore, we conclude that there were no differential effects of attrition on intervention conditions and that our randomization procedure was successful. We also found no differences between conditions in their responses to the group environment, perceptions of videotapes, and group facilitator scales (all \( ps > .10 \)).

Information and Motivation Outcomes

Results of ANCOVAs conducted between the motivational skills-building intervention and the education comparison condition, controlling for baseline scores, age, and education, did not indicate significant differences between groups on measures of AIDS knowledge, condom attitudes, or behavioral intentions at the immediate postintervention, 3-month, or 6-month follow-up (see Table 1). Thus, both interventions showed similar patterns of knowledge and attitudes across assessments.
HIV Risk-Reduction Skills

Results showed that participants in the motivational skills-building intervention were more likely than participants in the comparison condition to report using condoms almost every time they had intercourse and talking with a sex partner about AIDS at the 3-month follow-up (see Table 2). These differences were no longer significant at the 6-month follow-up. However, the men in the motivational skills intervention planned ahead of time to have sex and talked with a sex partner about condoms at a greater rate than did those in the comparison condition at the 6-month follow-up. Thus, although men in the motivational skills condition indicated using behavioral skills for HIV risk reduction to a greater extent than men in the comparison group, the pattern of skills used varied across the follow-ups.

Substance Use and Sexual Risk Reduction

Analyses tested group differences in using alcohol and other drugs before sex, sexual behavior, and risk reduction behaviors controlling for baseline behavior, age, and education. Results showed that participants in the motivational skills-building intervention reported significantly less use of drugs in conjunction with sex at the 3-month follow-up, $F(1, 91) = 4.10, p < .05, d = 0.41$, and less use of alcohol before sex, $F(1, 76) = 8.46, p < .05$,

Table 2
Percentage of Men Reporting Use of Risk-Reduction Skills at the 3-Month and 6-Month Follow-Ups

<table>
<thead>
<tr>
<th>Behavior and assessment</th>
<th>Motivational skills</th>
<th>HIV education</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$n$</td>
<td>$%$</td>
</tr>
<tr>
<td>Refused unsafe sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 months</td>
<td>37</td>
<td>76</td>
</tr>
<tr>
<td>6 months</td>
<td>32</td>
<td>74</td>
</tr>
<tr>
<td>Planned to practice safer sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 months</td>
<td>43</td>
<td>88</td>
</tr>
<tr>
<td>6 months</td>
<td>40</td>
<td>93</td>
</tr>
<tr>
<td>Talked with a partner about condoms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 months</td>
<td>41</td>
<td>84</td>
</tr>
<tr>
<td>6 months</td>
<td>37</td>
<td>86</td>
</tr>
<tr>
<td>Talked with a partner about AIDS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 months</td>
<td>44</td>
<td>92</td>
</tr>
<tr>
<td>6 months</td>
<td>35</td>
<td>81</td>
</tr>
<tr>
<td>Used condoms almost always</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 months</td>
<td>34</td>
<td>69</td>
</tr>
<tr>
<td>6 months</td>
<td>32</td>
<td>74</td>
</tr>
</tbody>
</table>

Note. $d$ = Cohen’s (1988) index of effect size; motivational skills building $n = 49$ and comparison $n = 47$ at the 3-month follow-up; motivational skills building $n = 43$ and comparison $n = 38$ at the 6-month follow-up.
d = 0.65, and less use of other drugs before sex, \( F(1, 76) = 6.07, p < .01, d = 0.55 \), at the 6-month follow-up (see Table 3).

Results of ANCOVAs controlling for baseline behavior, age, and education showed that the motivational skills-building intervention evidenced significantly lower rates of unprotected vaginal intercourse, \( F(1, 91) = 4.76, p < .05, d = 0.44 \), and greater use of condoms during intercourse, \( F(1, 66) = 5.38, p < .05, d = 0.55 \), relative to the comparison condition at the 3-month follow-up. However, differences between conditions at the 6-month follow-up were not statistically significant and there were no differences between groups for numbers of sex partners at both the 3- and 6-month assessments. Finally, we found that participants in the motivational skills intervention more often reported carrying condoms (88%) than those in the comparison condition (70%) at the 3-month follow-up, \( \chi^2(1, N = 96) = 4.47, p < .05, d = 0.44 \). However, the difference between conditions on carrying condoms was no longer significant at the 6-month follow-up.

Discussion

Despite high rates of HIV seroprevalence, misperceptions of risk, and heterosexual transmission of HIV, there have been few HIV prevention interventions targeted to heterosexual and bisexual men. In contrast, there has been considerable attention paid to designing HIV risk reduction interventions for inner-city women. Unfortunately, gender power imbalances in heterosexual relationships limit the success of women to effectively reduce their risk when men are resistant to using condoms (Worth, 1990). Results of the current study are among the first to demonstrate positive outcomes from a cognitive–behavioral HIV risk reduction intervention designed for men who have sex with women. The intervention demonstrated significant differences in implementing behavioral strategies for reducing HIV risk, as well as significant reductions in unprotected intercourse and increased use of condoms compared with a nonskills-based alternative HIV prevention intervention. The motivational skills and the HIV education groups did not differ in AIDS-related knowledge, positive attitudes toward condoms, and intentions to change risk behaviors. However, behavioral skills enhancing components did promote actual risk behavior change. These findings are consistent with other studies that have shown nonskills-building intervention approaches can educate and motivate persons at risk for HIV, but skills-building experiences must be included to change risk behavior (Belcher et al., 1998; Kalichman, Rompa, & Coley, 1996).

Although our findings support the use of small group skills-building interventions for HIV risk reduction in inner-city men, differences between groups dissipated 6 months after the intervention. Maintenance of behavior change is a well-recognized problem across areas of health promotion (Brownell, Marlatt, Lichtenstein, & Wilson, 1986). Although HIV risk reduction behavior change is likely to require intermittent contact to support change, many intervention studies have only reported outcomes over a 3-month follow-up period (Kalichman & Hospers, 1997). Studies reporting longer term follow-up indicate diminished effects over time. Inspection of Table 3, however, shows that the skills-building intervention maintained behavioral changes, with the comparison group narrowing the gap between conditions at the 6-month follow-up. Nonetheless, implementation of HIV risk-reduction interventions in community settings will require efforts to support longer term behavior change, such as through the use of booster sessions or intermittent social reinforcements.

We found that men recruited from an STD clinic reported relatively high rates of HIV preventive behaviors before the intervention; nearly half of intercourse occasions were protected by condoms, a rate similar in magnitude to that reported after suc-

| Table 3 | Substance Use and Sexual Behaviors Over the Past 3 Months for Motivational Skills-Building and HIV Education Interventions at Baseline and at 3-Month and 6-Month Follow-Ups |
| --- | --- | --- | --- |
| Behavior and intervention | Baseline | 3 months | 6 months |
| | M | SD | M | SD | M | SD |
| % protected vaginal intercourse (condoms) | | | | | | |
| % protected vaginal intercourse (condoms) | 51.8 | 37.4 | 70.9a | 28.2 | 75.6 | 32.8 |
| HIV education | 45.8 | 34.7 | 53.6b | 41.4 | 67.1 | 39.9 |
| HIV education | 3.5 | 4.2 | 2.9 | 3.9 | 2.7 | 3.9 |
| HIV education | 4.9 | 9.3 | 2.9 | 3.6 | 2.1 | 2.0 |

Note. Significant difference between groups for \( \log_{10}(x + 1) \) transformed data controlling for baseline, age, and education. Different subscripts denote significant differences between groups. Motivational skills building \( n = 49 \) and comparison \( n = 47 \) at the 3-month follow-up; motivational skills building \( n = 43 \) and comparison \( n = 38 \) at the 6-month follow-up.
cessful HIV prevention interventions for women (i.e., Kelly et al., 1994). In addition, a majority of men in both conditions reported using behavioral risk reduction skills at the follow-up assessments. Given that nearly all of the men had been tested and counseled for HIV and that they were recruited from a clinic that provides counseling for STD prevention, the observed intervention effects occurred beyond those resulting from existing services. Therefore, intensive and interactive behavioral skills-building group interventions offer reductions in HIV risk beyond the outcomes expected from the state of prevention practice in a city with a high prevalence of HIV cases.

Like almost all clinical trials of its type, the present study relied on self-report measures for all of its behavioral outcomes. However, the study design used an anonymous assessment procedure and equalized contact and reimbursements across conditions to minimize potential differential demand characteristics and socially desirable responses. In addition, the relatively small sample size reduced statistical power to detect small differences between conditions and reduced the generalizability of the study findings. The behavioral data were also highly skewed and affected by outliers, again potentially reducing statistical power to detect differences. Finally, like all other HIV risk reduction intervention research, providing incentive payments for participation may have reduced the external validity of the study. Whether individuals with similar risk profiles would attend such a program without reimbursement, and without the burden of assessments and follow-up, remains an open and important question.

One of the main purposes of the present research was to examine the feasibility and effectiveness of a video-based motivational skills-building intervention that may be more easily implemented in community-based settings. Community-based group facilitators who had no previous experience working in a research protocol delivered the intervention. Their adherence to the intervention content required minimal supervision because each component delivered the intervention. Their adherence to the intervention who had no previous experience working in a research protocol was driven by videotapes that set the stage for interactive educational, motivational, and skills-building experiences. Our findings therefore support the ability to transfer research-tested skills-building interventions for HIV risk reduction to community settings, providing that the intervention elements are packaged to facilitate implementation. Other barriers to technology transfer also require attention, including marketing such programs to persons at greatest risk (Hoff et al., 1997), sustaining programs in communities (Altman, 1995), and integrating program evaluation with program planning (Morrissy et al., 1997). Our findings therefore encourage the use of skills-building interventions in settings where structures for group services are most feasible or already exist, such as drug treatment centers, correctional facilities, and health clinics.

References


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