Published in final edited form as:

J Behav Ther Exp Psychiatry. 1997 June ; 28(2): 87–95.

HIV Risk Reduction for the Seriously Mentally Ill: Pilot Investigation and Call for Research

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Abstract

Research indicates that people with serious mental illnesses (SMI; e.g., schizophrenia, schizoaffective disorder, bipolar disorder) are at enhanced risk for infection with the human immunodeficiency virus (HIV). To decrease this risk, we piloted a six-session HIV-risk reduction intervention for two single-gender groups (9 women, 8 men; *M* age = 39.8 years) of SMI outpatients. The intervention and assessment were based on the Information-Motivation-Behavioral Skills model of HIV-preventive behavior (Fisher & Fisher, 1992) and employed activities designed specifically for people with a SMI. Data were collected at pre-and post-intervention, and at a one-month follow-up. Results indicated that this brief intervention resulted in enhanced HIV-related knowledge, and trends toward enhanced skill at condom use negotiation and condom use self-efficacy. Overall, a modest decrease in risk behavior among participants was observed. Thus, this pilot investigation revealed that HIV-related risk of the SMI can be reduced through traditional behavioral skills and education methods. Future research employing control groups, more intensive interventions, and baseline screening for high risk is encouraged.

The term seriously mentally ill (SMI) typically refers to a heterogeneous group of approximately 2.8 million individuals (Auerbach, Wypijewska, & Brodie, 1994) who are diagnosed with psychotic or affective disorders (e.g., schizophrenia, schizoaffective disorder, bipolar disorder), and who exhibit chronic psychiatric symptoms, requiring at least short-term hospitalizations. Contrary to the stereotypical image of the asexual psychiatric patient (Harvis & Trivelli, 1990), recent surveys indicate that many SMI are sexually active, engage in high risk sexual behaviors, and experience enhanced risk for sexually transmitted diseases, including the human immunodeficiency virus (HIV; cf. Kalichman, Carey, & Carey, in press). Despite these characteristics and risk, researchers have been slow to address sexual risks among the SMI.

Several recent survey studies have examined sexual risk behavior among the SMI (e.g., Cournos et al., 1994; Carey, Carey, Weinhardt, & Gordon, in press; Kalichman, Kelly, Johnson, & Bulto 1995; Kelly et al., 1992; Knox, Boaz, Friedrich, & Dow, 1994). These studies, which have been conducted across an array of treatment settings (i.e., inpatient, outpatient, homeless shelters) and geographic locations (e.g., Milwaukee, New York City, Syracuse), document that the SMI engage in behaviors that facilitate the transmission of HIV. Risk behaviors include unprotected intercourse, multiple sexual partners, high-risk partners (e.g., injection drug users), anonymous sexual partners, and use of alcohol and other drugs before sex.

In addition to these risk behavior studies, a number of HIV-seroprevalence studies have been conducted with SMI samples. Carey, Weinhardt, and Carey (1995) aggregated the results across published seroprevalence studies and found that 5% (i.e., 28 / 550) of SMI women and 10% (i.e., 82 / 832) of SMI men tested positive for HIV infection. This rate represents a disproportionate prevalence of HIV infection among the SMI, compared to the estimated rate of 0.24% - 0.345% for the general population of the United States (cf. Rosenberg, 1995). The seroprevalence rate among the SMI women is dramatically disproportionate to women in the

United States, who account for only 13% of AIDS cases among adults (Centers for Disease Control and Prevention, 1994).

Five factors have been identified as increasing risk behaviors among the SMI: severity and symptomatology of psychopathology, alcohol and drug use prior to sexual behavior, HIV-related knowledge deficits, inaccurate perceptions of infection risk, and environmental factors that influence lifestyle choices (Kalichman, Carey, & Carey, in press). Related to psychopathology, the severity of cognitive deficits, affective instability, and behavioral impulsivity (e.g., Carmen & Brady, 1990) increase HIV risk, as does comorbid personality disorders and drug dependence disorders (Kalichman et al., in press).

In contrast to relatively high knowledge levels in the general population (cf. Peruga & Celentano, 1993), lack of accurate HIV-related information among the SMI has been documented in several studies. For example, a survey of 60 outpatients of a state psychiatric facility found that 30% did not know that a person can be infected but asymptomatic, and many patients believed incorrectly that practices such as douching (45%), oral contraception (23%), or the use of a diaphragm (48%) would protect against HIV infection (Carey et al., in press). Overall, women and men responded incorrectly to 37% and 39% of informational items, respectively. Without this information, individuals are unable to assess their risk for infection, or take appropriate action to reduce risk.

The tendency among the SMI to underestimate risk for infection (Knox et al., 1994; Carey et al., in press) is also problematic. SMI patients have reported little fear of AIDS (Sacks, Perry, Graver, Shindledacker, & Hall, 1990), lack of concern about contracting HIV (Hanson et al., 1992; Kelly et al., 1992), and perception of personal risk for infection ranging from none to low (Carey et al., in press). When individuals do not recognize the connection between their behavior and risk for infection with HIV, or other behavior-health associations, there may be few other incentives for modifying the risk-conferring behavior (Janz & Becker, 1984).

Many of the SMI live in shelters, boarding homes, or on the street. As many as 45% report being homeless (Kalichman, 1994), and a study of homeless SMI individuals reported the highest HIV seroprevalence rates (19%; Susser, Valencia, & Conover, 1993) of any SMI group assessed to date (Carey et al., 1995). Due to the life circumstances of many of the SMI, their sexual relationships often appear transient and casual with many reporting trading sex for shelter, food, or drugs (Kalichman et al., in press).

Based upon these data and other data, the National Institute of Mental Health announced that people with severe mental illnesses are an "AIDS-risk group of particular concern" (National Institute of Mental Health, 1993). Despite this recognition, few studies have described efforts to reduce risk for HIV infection using well-accepted behavioral skills training methods (e.g., Hersen & Bellack, 1976; Kelly, 1982). The purpose of the present research was to conduct a pilot evaluation of an intervention designed specifically to help seriously mentally ill men and women to lower their risk for HIV infection.

Method

Participants

Participants were 17 individuals (9 women and 8 men; *M* age = 39.8 years) recruited by flyers and announcements at psychosocial clubs associated with a large public psychiatric hospital. Fifty-two percent of the participants had a primary diagnosis of schizophrenia or schizoaffective disorder and 23% had a diagnosis of a mood disorder. Participants had been admitted to a psychiatric hospital an average of 6 times. Participants' *M* level of education was 10th grade and 88% were unemployed. Two participants were married, one was living with a

sexual partner, three were in a sexual relationship but not living with the partner, and 11 were not in sexual relationships at the time of the study.

Procedure

Participants responded to flyers and announcements, gave informed consent, and completed the pre-intervention survey. Surveys were completed in small groups in private rooms. Individuals with reading difficulties were led through the questionnaire by a staff member, and were able to respond privately by marking their answer on a copy of the survey. If available to attend all six intervention sessions, participants were assigned to either the male or female group. Participants were paid \$5 for each survey completed and \$5 for each intervention session attended. Individuals who were unable to participate because they could not attend the six sessions were offered an alternative educational program. Post-intervention and follow-up assessments took place approximately 4 and 8 weeks later, respectively.

Dependent Measures

Assessment was guided by the Information-Motivation-Behavioral Skills Model of HIV-Preventive behavior (IMB; Fisher & Fisher, 1992); the IMB model proposes that information and motivation work through, and have effects on preventive behavior limited by, behavioral skills. All measures had been used previously in this setting (Carey et al., in press).

Information—HIV-related information was assessed with a 40-item true-false scale that contains questions regarding transmission routes, disease progression, and prevention options. This scale yields a total score, which is the number of correct responses.

Motivation—The Multidimensional Condom Attitudes Scale (MCAS; Helwig-Larsen & Collins, 1994) was used to assess attitudes toward preventive behavior, a proposed component of motivation for HIV-preventive behavior (Fisher & Fisher, 1992). The MCAS consists of four factors: (a) embarrassment about negotiation for condoms, (b) embarrassment about purchasing condoms, (c) reliability and effectiveness of condoms, and (d) identity stigma associated with condom use. Participants responded to items on a 7-point Likert scale, with anchors ranging from “strongly disagree” to “strongly agree.” The items were coded so that higher scores indicated more positive attitudes.

Level of perceived risk for HIV infection was assessed with a series of 5 questions that required participants to rate their risk for being infected based on their behavior. Participants responded on a percent risk scale ranging from 0% chance of being infected to 100% chance of being infected.

Behavioral Skills—Participants’ level of skill at negotiating for safer sex was assessed with a written role play. The scenario presented to participants on the survey was as follows: “You meet up with an ex-partner, who you haven’t seen in two years. This person is someone you had sex with many times, and you’ve always liked being with the person. The last time you met with this person you had sex. You agree to meet at the person’s place to spend a few hours. You think you will have sex. You know that your ex-partner thinks using a rubber is probably a waste of time, because you’ve been regular sex partners on-and-off for a long time.” Participants were instructed to respond by writing, directly on the questionnaire, anything they would say or do in the situation to keep themselves safe. Response quality was rated on four dimensions: (a) refusal of unsafe behavior [range 0-2], (b) reason for refusal [range 0-2], (c) suggestion of an alternate behavior [range 0-1], and (d) the appropriateness of response [range 0-3]. This rating system has demonstrated excellent interrater reliability in previous research (Gordon & Carey, in press).

Because low self-efficacy for preventive behavior may decrease the likelihood that one will use a preventive behavioral skill, such as applying a condom or negotiating for condom use, to prevent infection, self-efficacy for preventive behavior was assessed with the Condom Use Self-Efficacy Scale, Revised (CUSES-R; Brien, Thomas, Mahoney, & Wallnau, 1993). This is a 15-item scale designed to assess participants' confidence in their ability to (a) be assertive with a sexual partner, (b) negotiate for condom use without fear of partner disapproval, (c) use a condom correctly, and (d) negotiate for and use a condom when intoxicated. Responses were indicated on a 5-point Likert-type scale with anchors ranging from "strongly disagree" to "strongly agree." Higher scores indicate more self-efficacy.

Risk Behavior—Sexual history, including frequency of risk behavior (sex without a condom, anonymous sex partners, intercourse after drinking or using drugs, sex with an injection drug user, sex in exchange for food, drugs, or lodging, injection drug use, sex with a non-monogamous partner, and multiple sex partners) in the past three months, was assessed with a series of 15 questions. This questionnaire was adapted from prior work with the SMI (Kalichman Sikkema, Kelly, & Bulto, 1995). Post-intervention and follow-up assessments covered risk behaviors since the last assessment.

Client Satisfaction—Following the final intervention session we administered a series of questions, to be answered anonymously, about how interesting, helpful, and embarrassing the group meetings had been for participants.

Intervention

The intervention was conducted at a community center for outpatient clients of a large psychiatric hospital. Both groups were led by one male and one female graduate student, both with extensive prior training and experience facilitating HIV-prevention programs. Two separate same-gender groups were conducted; both groups received the same intervention. The intervention consisted of six sessions, 1 hour each, held twice a week for three consecutive weeks. Facilitators followed a treatment manual adapted from activities and scripts in the New York State Office of Mental Health's HIV Prevention for People with Mental Illness (Kaplan, Herman, Cournos, Bailum, & Sugden, 1993). Each session is briefly described below.

Session 1 was designed to build rapport and group cohesion by introducing group members and co-facilitators, discussing goals and group rules; and building comfort with sexual words. Session 2 included explanation of transmission routes and common HIV/AIDS myths. In session 3, participants discussed perception of the threat of infection, learned how to assess risk of behaviors proposed by partners; and discussed the importance of screening sexual partners. During session 4, the importance of condoms and dental dams was explained. Proper condom use was demonstrated. Session 5 focused on how to identify high-risk situations, included a discussion of reasons for engaging in risky behavior, and introduced role-playing negotiation for condom use. In session 6, participants continued to role-play negotiation for condom use. Reactions to the group were discussed, the content of the group was summarized, and participants were debriefed. All sessions were interactive, and the facilitators encouraged active participation.

Results

Group Attendance and Satisfaction

Eight of nine women and six of eight men attended at least half of the sessions. On average, participants rated the sessions very interesting and helpful, but moderately embarrassing. Sixteen of 17 participants were comfortable having both male and female group leaders.

Dependent Variables

The two groups were combined to enhance statistical power, and repeated measures analyses of variance (ANOVAs) were performed for all measures.

Information—Participants HIV information scores increased significantly, $F(2,32) = 4.9$, $p < .02$, from pre-intervention (M correct = 66%) to post-intervention (M correct = 75%); participants maintained gains in information to the one-month follow-up (M correct = 75%). There was a systematic relationship between the number of sessions attended and improvement, $r = .62$, $p < .02$.

Motivation—Analysis of the MCAS data detected no significant changes or systematic trends in participants attitudes toward condom use (all $ps > .10$). Inspection of the perceived risk data indicates that the participants appraised their risk of infection as relatively low prior to the intervention (see Table 1). Following the intervention, participants continued to rate their perceived personal risk as low but there was an increase on several items from the pre-intervention levels; for example, there was a doubling of perceived risk based on behavior in the past year, from 7.9% at pre-intervention to 15.7% at follow-up ($p = .13$). These increases occurred at the same time that perceived risk associated with two preventive behaviors, being careful about sexual partners and using condoms during sex, decreased during the project. Participants tended to rate someone who is identical in age, gender, and behavior to themselves at higher risk for infection than themselves pre-intervention (7.9% for self, 13.6% for other -- a 5.7% difference); however, this discrepancy decreased over the course of the project (2.6% difference at follow-up).

Behavioral Skills—Four dimensions of behavioral skill were assessed. Participants improved significantly for stating a reason for their refusal of unsafe activities, $F(2,32) = 4.64$, and how appropriately they stated their intentions, $F(2,32) = 4.36$ ($ps < .03$). The other two dimensions, statement of refusal and suggestion of an alternate behavior, exhibited trends in the direction of improvement, but these changes were not statistically significant (see Table 2). The improvement on total role-play scores approached significance ($p < .10$). There was also a trend toward improved self-efficacy for condom use (see Table 3).

Risk Behavior—The mean risk index decreased from 3.0 at pre-intervention to 2.6 at post-intervention to 2.9 at follow-up. Although this trend was in the predicted direction, the results were not statistically significant, $F(2,32) = 0.849$, ns.

Discussion

The findings of this small, pilot investigation revealed that seriously mentally ill men and women increased their HIV-related knowledge, enhanced their ability to negotiate for condom use with a sexual partner, improved self-efficacy for condom use, and modestly decreased HIV-risk behavior as the result of a brief, behavioral skills based HIV-risk reduction intervention. These improvements were modest in magnitude but consistent in the direction that was anticipated. The response to our intervention is particularly noteworthy given the participants' prior history of serious psychopathology and multiple inpatient admissions.

The beneficial effects achieved in this study were probably muted for several reasons. First, the sample size was very small for a clinical trial. Given that the average effect size for behavior change in HIV-prevention interventions has been shown to be small (Kalichman, Carey, & Johnson, in press), larger samples would be needed to obtain statistically significant effects. Second, although most participants were sexually active, many reported low levels of risk behavior prior to the project. Had we selected only high-risk participants, a common practice

in prevention research when measuring low frequency events such as sexual behavior (cf. Muehrer & Koretz, 1992), it is likely that greater reductions would have been observed. Third, the behavioral skills assessment may have underestimated the actual gains achieved; that is, the assessment was based on one scenario and dependent upon participants' ability to self-report their responses accurately on the paper-and-pencil questionnaire. It is likely that a role-play test (i.e., behavioral simulation) would have been more sensitive in detecting skill improvements. Finally, the intervention itself was rather brief given the ambitious intervention goals. Seriously mentally ill adults may profit from repetition of complex material (i.e., HIV transmission and prevention, testing and the window period of infection) and more opportunities to rehearse and receive feedback on socially sensitive skills. Indeed, the significant positive correlation between number of sessions attended and the change in performance from pre-intervention to post-intervention suggests that additional sessions may have strengthened the intervention effects.

Acknowledgements

This pilot work represents only the second published evaluation of an HIV prevention intervention designed for the SMI to include sexual behavior as an outcome variable (cf. Kalichman et al., 1995; Katz, Westerman, Beauchamp, & Clay, 1996). Confidence in the findings obtained herein should be tempered by the small sample size and absence of a control condition. However, given these encouraging findings and the magnitude of the risk of infection among the SMI, we urge continued investigation of behavioral skills training and other risk reduction procedures for this underserved and at-risk population. Future evaluations of HIV-risk reduction interventions for the SMI should include a control group, employ more intensive interventions, and screen potential participants for HIV risk status. Such research is urgently needed to avert further infections among the seriously mentally ill.

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Table 1

Mean Percentages on Perceived Risk Items

Survey Item	Pre-intervention	Post-intervention	Follow-up
1. Based on your behavior in the past year, what is your risk for HIV infection?	7.9	10.0	15.7
2. What is the chance you will be infected in the next year?	9.2	10.8	11.5
3. If you are careful about who you have sex with in the next year, what is the chance you will be infected?	13.6	12.1	7.9
4. If you use latex condoms when you have sex during the next year, what is the chance you will be infected?	12.1	8.6	12.9
5. What is the chance that someone who is your age and sex, and behaves the way you do will be infected during the next year?	13.6	5.0	12.9

Note. Values are “percent risk of becoming infected” and have a potential range of 0 - 100.

Table 2

Mean Scores for Negotiation for Condom Use

Rating (potential range)	Pre-intervention	Post-intervention	Follow-up
Refusal of unsafe behavior (0-2)	1.6	1.6	1.8
Reason for refusal (0-2)	0.9	0.6	1.5*
Alternative behavior specifically suggested (0-1)	0.4	0.9	0.8
Intention appropriately stated (0-3)	1.7	1.9	2.1*
Total	4.6	5.0	6.1

Note. Greater scores indicate more skilled responses.

*
p < .05.

Table 3

Mean Self-Efficacy for Condom Use

Self-Efficacy Dimension (potential range)	Pre-intervention	Post-intervention	Follow-up
Assertiveness with partner (0-12)	8.4	8.2	8.8
Ability to negotiate without fear of partner disapproval (0-16)	10.5	11.7	11.4
Mechanical skill (0-12)	9.2	10.1	10.4
Ability to negotiate for and use when intoxicated (0-12)	8.5	7.5	9.1
TOTAL SCORE (0-60)	36.9	38.0	40.8

Note. Greater scores indicate more self-efficacy.