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Behavioral Risk for HIV Infection Among Adults with a Severe and Persistent Mental Illness: Patterns and Psychological Antecedents

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Abstract

Behaviors associated with transmission of the human immunodeficiency virus (HIV) were measured in a sample of 60 adults with a severe and persistent mental illness (SPMI). Results revealed that 68% had sex in the last year; 13% of men and 30% of women reported two or more male partners, and 24% of men also reported two or more female partners. Condom use was inconsistent. Sex partners were often met in a psychiatric clinic or bar, and a substantial number were injection drug users or known to be non-monogamous. Overall, 48% of men and 37% of women reported at least one risk factor. Hypothesized psychological antecedents of HIV-related risk behavior were also measured, including knowledge, motivation for risk reduction, and self-efficacy regarding risk-reduction. Many participants were misinformed regarding HIV transmission and risk reduction. Motivational indices indicated that attitudes toward condoms were slightly positive, and that social norms were generally supportive of condom use. However, participants tended to rate themselves at only slight risk for infection, undermining their motivation for condom use. Participants indicated only modest levels of self-efficacy in situations requiring sexual assertiveness. These findings, coupled with the elevated seroprevalence of HIV among persons having a SPMI, point to the need for risk assessment and counseling by mental health care providers.

The prevalence of infection with the human immunodeficiency virus (HIV) in persons who have a severe and persistent mental illness (SPMI) is 10 to 76 times greater than the rate found in the general population; estimates indicate that 4 – 23% are infected with HIV compared to 0.3 – 0.4 % of the general population (Carey, Weinhardt, & Carey, 1995). Research has begun to detail the HIV-related risk-conferring behaviors among adults with a SPMI. For example, Kelly and his colleagues (1992) assessed risk behavior among adults at community mental health clinics in Milwaukee. They found that 12% of adults reported that they had exchanged sex for money, drugs, or a place to stay; and 33% reported a history of sexually transmitted diseases other than HIV. Kalichman, Kelly, Johnson, and Bulto (1994) reported that 27% of their participants had two or more sexual partners in the previous year, and that 18% received money or drugs in exchange for sex. Sacks, Perry, Graver, Shindledecker, and Hall (1990) studied acute admissions, and reported that 68% of men and 20% of women engaged in behaviors that placed them at risk for HIV infection. Although these preliminary studies provide useful data, additional information from other settings is needed. Research is also needed to explore psychological antecedents that may underlie HIV-related risk taking in this population. According to the Information-Motivation-Behavior model (IMB; Fisher & Fisher, 1992), “AIDS-risk reduction is a function of people’s *information* about AIDS transmission and prevention, their *motivation* to reduce AIDS risk, and their *behavioral skills* for performing the specific acts involved in risk reduction” (p. 455). The primary purpose of this study was to document further HIV/AIDS-related risk behavior among adults with a SPMI receiving outpatient treatment at a public psychiatric hospital. A secondary purpose was to explore the association between risk behavior and several hypothesized psychological antecedents.

Method

Participants

Thirty-three men and 27 women attending outpatient clinics affiliated with a state psychiatric hospital participated. Participants ranged in age from 23 to 62 years ($M = 39.5$; $SD = 9.5$). Consistent with local demography, 73% were Caucasian, 17% African-American, 5% Native American, and 5% other ethnic groups. Nearly all (90%) had incomes of less than \$11,000, and 82% were unemployed. Seventeen (28%) had not completed high school, 30 (50%) had received a high school degree or its equivalent, and 13 (22%) had attended college. Only 5 (8%) were married. Participants had a long history of involvement with the mental health care system. For example, age of first admission to a psychiatric hospital ranged from 12–53 years ($M = 26.3$; $SD = 9.9$). Participants averaged 10 previous admissions, and 21 (35%) had a history of alcohol or drug abuse treatment. A chart review revealed the following primary diagnoses: 19 (32.2%) affective, 17 (28.8%) schizoaffective, 13 (22%) schizophrenia, 2 (3.4%) anxiety, and 8 (13.6%) other disorders.

Measures

A self-administered survey measured HIV-related risk behavior, information, motivational beliefs, and self-reported skills. The survey contained questions regarding the experience of completing the survey, and interest in prevention programs. Development of the survey was guided by theoretical and methodological suggestions provided by Fisher and Fisher (1992) and Fishbein et al. (1991); its content was adapted from measures used by Kalichman et al. (1994). Items were written at an 8th grade reading level.

Risk behavior—Participants were asked about the number of male and female sexual partners, high-risk sexual partners (i.e., injection drug users, non-monogamous partners), alcohol and drug use during sexual activity, injection drug use, unprotected sexual activity, sex trading, history of STDs, and HIV serostatus. Items referred to behavior occurring during the past month, past year, and over the person's lifetime.

Information—Twenty-three items were used to determine HIV-related information. Participants were asked to indicate whether each item was true or false, or to indicate that they did not know the answer. These items form two subscales: AIDS-related (11 items) and condom use knowledge (12 items); higher scores indicate more knowledge. The subscales are stable ($r_s = .90$ and $.76$, respectively; Kalichman et al., 1994).

Motivation—Consistent with the Theory of Reasoned Action (Fishbein & Middlestadt, 1989), attitudes towards condoms and perceived social norms toward condom use were measured. Consistent with the AIDS Risk Reduction Model (Catania, Kegeles, & Coates, 1990), perceived risk for HIV/AIDS was included to supplement the assessment of motivation. Catania et al. have proposed that awareness of personal susceptibility to AIDS may function as a more primary motive of behavior; that is, if individuals do not perceive their behavior as risky, attitudinal and normative factors may be less important. Twenty-one items were used to measure these three motivational variables.

To measure attitudes toward condom use, 14 items from Kalichman et al. (1994) were used. Each item was rated on a 7-point scale (1="Strongly disagree" to 7="Strongly agree"). Two items were reverse scored and all were averaged to yield a summary score. Social norms for condom use were assessed with 2 items adapted from Fishbein et al. (1991). On a visual analog scale with 7 response options, respondents indicated that (a) Most people who are important to me think I should/should not always use a condom when I have sex, and (b) People I respect and admire want me/do not want me to always use a condom when I have sex. Lower scores

represent more positive attitudes towards condoms and more favorable perceived norms towards condom use.

Five items were used to determine participants' perception of their risk for HIV infection. Four items were scored on 6-point scales (1="No risk at all" to 6="Extremely at risk"); these were averaged to create a composite score. Higher scores indicate greater perceived risk. The fifth was a global, dichotomous item indicating whether or not the respondent considered him/herself at risk for AIDS.

Behavioral skills—Self-report of self-efficacy in specific situations was used as a proxy measure of behavioral skills. Fisher and Fisher (1992) have asserted that self-efficacy and behavioral skills are strongly associated and, in studies guided by the IMB model, behavioral skills are often operationalized in this manner. Six items were used to assess self-efficacy. Two scenarios descriptive of real-life sexual encounters were presented to participants who rated their confidence level regarding their ability to insist on condom use. Items yielded an index ranging from 0 to 100.

Survey experience and interest in prevention program—Participants indicated whether (a) completing the survey was interesting and/or embarrassing, and (b) they would be interested in attending programs to learn more about HIV. They were also asked to state their preference about the gender composition of such groups.

Procedure

Patients at three outpatient clinics and two psychosocial clubs were invited through posters and pamphlets, which indicated that a survey was being conducted to learn more about "Sexual Behavior in the 90's." The materials promised confidentiality, offered \$5 for participation, and provided sign-up information.

Small same-sex groups met with two members of our team. The purpose and procedures of the survey were explained. Participants were informed that their names would not appear on the survey. They were asked to provide informed consent and a release granting access to their records. Participants then recorded their responses on individual surveys. Overhead transparencies of the survey were projected onto a large screen and items read aloud by the investigators to minimize literacy difficulties (Kalichman et al., 1994). Afterward, participants were encouraged to comment on the survey and to ask questions; finally, they received \$5 for their participation.

Results

HIV-related Risk Behavior

Ninety-five percent of participants had been sexually active during their lifetimes; 68% and 42% reported having sex in the last year and month, respectively. Twenty percent of men had homosexual experience.

Characteristics associated with increased risk for infection with HIV were documented. For example, 17% of all participants had an STD during their lifetime. During the past year, 13% of men and 30% of women reported two or more male partners, and 24% of men also reported two or more female partners. During the past month, 14% had two or more heterosexual partners, and 7% of men reported two or more male partners.

Sexual encounters often occurred in situations known to involve risk. For example, during the past year, it was common for participants to use drugs (15%) or to drink (19%) before sexual activity, and to have sex with someone whom was met in a bar (20%) or clinic (27%).

Involvement with a injection drug user (10%) or a partner known to be non-monogamous (14%) was also substantial. Seven percent admitted to injected drug use, 14% traded sex, and 14% were forced to have sex against their will. Many participants did not take steps to reduce risk; 43% used condoms inconsistently or not at all.

Overall, 48% of men reported at least one risk factor, 15% reported two risk factors, and 9% admitted to three or more risk factors. For women, these percentages were 37%, 37%, and 15%. Gender was associated with the presence of two or more risk factors [$X^2(1) = 3.79, p < .05$], with the proportion of women at risk exceeding that of men.

Hypothesized Antecedents of HIV-related Risk Behavior

Information—Many participants held misperceptions regarding HIV transmission, risk reduction, and AIDS. For example, 30% did not know that a person can be infected but asymptomatic; many thought that HIV could be transmitted from a toilet seat (35%), or from donating blood (58%). Information about condom use was often inaccurate as well: 10% thought that having a small hole in a condom did not hinder its effectiveness; 50% did not know that lambskin condoms provide less protection than latex; 42% did not recognize the need to leave a reservoir at the tip of a condom, and 28–45% believed incorrectly that oil-based lubricants are effective when used with condoms. Many patients believed, incorrectly, that practices such as douching (45%), oral contraception (23%), or use of a diaphragm (48%) would protect against HIV transmission. Overall, men correctly answered 61%, whereas women answered 65% correctly; men and women did not differ regarding the accuracy of their knowledge, nor on either of the two subscales ($ps > .10$).

Motivation: Attitudes toward condom use—Attitudes ranged from neutral to slightly positive ($M = 3.1, SD = 1.5$), and men and women did not differ in their attitudes.

Motivation: Risk perception—Participants tended to rate themselves at no or slight risk for infection whereas they rated other people they know (who are similar to themselves) as “somewhat” or at a “good deal” of risk. No gender differences were found on any of the risk perception items or the composite score (all $ps > .10$).

Motivation: Social norms for condom use—In general, responses to these items indicated social norms supportive of condom use. Respondents indicated that people who are important to them, and people who they respect and admire, think that they should use condoms ($M_s = 1.6$ and 1.7 , respectively).

Behavioral skills—In responding to self-report items depicting scenarios with sexual opportunities, participants indicated modest levels of self-efficacy ($M = 58, SD = 32$).

Factors influencing level of risk—To examine further the psychological factors that may be associated with risk, we conducted two sets of exploratory analyses. First, the sample was divided into two categories: those with little risk for HIV infection ($n = 34$), and those with moderate or high levels of risk ($n = 26$). Participants in the low risk group reported no risk during the past year, whereas those in the high risk group reported one or more risk factors ($M = 2.2, SD = 1.5$). These two groups were compared regarding their information, risk perception, perceived social norms, attitudes toward condoms, self-efficacy, and demographic characteristics. None of the variables differed as a function of risk status (all $ps > .10$); that is, persons who reported one or more risk factors in the last year did not report greater perceptions of risk, nor did they demonstrate any greater deficits in knowledge.

Second, to examine the possibility that a more specific risk reduction strategy might be associated with measurement of more specific psychological antecedents (see Fishbein et al., 1991), a second exploratory analysis was completed. In this analysis, levels of information, motivation, and self-efficacy were compared between subjects that were classified according to one specific risk-reduction practice, namely, condom use. Sexually active subjects were grouped according to condom use; separate *t*-tests compared information, motivation, and self-efficacy between those who used condoms on 100% of intercourse occasions (Consistent; *n*=13) in the previous month versus those who used condoms on less than 100% of occasions (Inconsistent; *n*=10). Knowledge, self-efficacy, and perceived risk did not differ (*ps* > .10), but those who used condoms consistently had higher motivation for condom use (*p* = .05).

Effects of Survey Participation and Interest in HIV Risk Reduction Programs

Participants were nearly unanimous in rating their involvement as very interesting and not embarrassing. Only 7% indicated that they would not recommend the survey to a friend; 23% indicated that they might and 70% indicated that they would. Moreover, 69% indicated that they would join a risk reduction program if it were offered, although most (68%) preferred single-gender (rather than mixed) groups.

Discussion

The primary purpose of this study was to measure HIV-related risk behavior among adults with a SPMI. More than two-thirds of adults in our sample were sexually active and/or involved in injection drug use during the past year. A sizable proportion of patients reported a history of STDs, multiple sexual partners, and/or involvement with high-risk partners, practices that increase risk for HIV infection. Sexual encounters often followed alcohol use or occurred in coercive relationships, contexts associated with enhanced risk for infection. These findings add to the growing body of evidence that (a) contradicts the “prevailing stereotype that they [persons with a SPMI] are asexual or not interested in sex” (Harvey & Trivelli, 1990), and (b) documents that risk among adults who have a SPMI exceeds that found in the general population (cf. Leigh, Temple, & Trocki, 1993).

The second purpose of this research was to investigate the antecedents of risky behavior. Guided by the IMB model of HIV-preventive behavior, we measured the hypothesized antecedents of HIV-related behavior. Consistent with this model, many participants were misinformed regarding HIV transmission and prevention. The poor knowledge demonstrated by our patients differs from findings obtained with the general public (Peruga & Celentano, 1993), where knowledge levels regarding HIV transmission and risk reduction tend to be high. These findings indicate the need for continued education among adults with a SPMI.

Motivational indices indicated that patients are not opposed to condom use and peer influences tend to be favorable; however, they perceive themselves at relatively low risk for infection. If we give greater weight to the latter, a more primary index of motivation, we are left to infer that patients are not motivated to use condoms nor to practice safer sex. The tendency to deny one's own risk relative to others has been described as “unrealistic optimism.” Weinstein (1984) has reported that most people demonstrate a bias in their judgments regarding susceptibility to disease or illness; specifically, most people think that they are less likely than the average person to experience problems. Given the high rate of risk behavior and situations observed among adults with a SPMI, we believe that their misperception of risk is more dangerous than that found in the general population.

Participants indicated only modest levels of self-efficacy regarding behavioral skills in situations involving sexual risk. These findings suggest that these individuals may have limited

interpersonal skills and/or lack of confidence to use those skills, and may also have difficulty gauging their ability to successfully navigate sexual situations.

Thus, participants in the current study, who were involved in a relatively high level of risk behaviors and situations, can be characterized as lacking key informational, motivational, and self-efficacy requisites needed to reduce their risk of HIV infection. Exploratory analyses documented that adults with a SPMI have an inadequate understanding of the relationship between their behavior and their risk for infection.

In addition to the antecedents identified by the IMB model, other psychological and social characteristics may increase the risk of HIV infection among adults with a SPMI. First, these individuals tend to be economically and socially disadvantaged with less access to health care and, perhaps, to condoms. Second, they may see AIDS as only one of a number of life-threatening problems and one which is less immediate than other concerns (e.g., violence). Third, adults with a SPMI may be vulnerable to illness-related changes in sexual behavior (e.g., hypersexuality), difficulties with judgment and problem-solving, exploitive or unstable social relationships, and co-occurring substance use disorders. Finally, they may be less inclined to insist upon condom use, which could jeopardize relationships that meet essential intimacy or other needs.

Several limitations of this research should be acknowledged. First, it is prudent to question the validity of self-reported behavior. However, we are inclined to trust these findings because evidence suggests that the primary problem in HIV risk assessment is under-reporting rather than over-reporting (Locke et al., 1992). Second, our operationalization of the constructs proposed by Fisher and Fisher (1992) was constrained due to the cognitive limitations and decreased stamina associated with having a major mental disorder. Finally, sample size limited the statistical power to examine risk behavior by psychiatric diagnosis, functional status, age, or other potentially predictive variables.

We conclude by recommending that sexual history taking, HIV education, and risk-reduction counseling become an integral component of the care of adults with a SPMI. Guidelines for the provision of these services can be found in Carey et al. (1995), Kalichman (1995), and Kelly (1995).

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