High-Risk Behaviors in Women Who Use Crack: Knowledge of HIV Serostatus and Risk Behavior

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PURPOSE: To determine whether crack cocaine-using women who are aware of their HIV serostatus have made modifications in risk behaviors, we compared known HIV-positive (HIV+) and HIV-negative (HIV−) users with respect to sexual risk behaviors, prevalence of sexually transmitted infections (STIs) and vaginitis, and correlates of unprotected sex.

METHODS: We used a cross-sectional design with street outreach, recruitment, and interviews of sexually active crack cocaine using women. Women received testing for HIV, STIs, and vaginitis.

RESULTS: Sixty-one HIV+ and 117 HIV− women were enrolled. HIV+ women were significantly more likely to be African-American. There were no significant differences in drug use, types of sexual partners, number of paying partners, attitudes regarding condoms, or STI diagnoses. HIV+ women were less likely to engage in unprotected sex compared with HIV− women (56% vs. 75%, adjusted odds ratio [AOR], 0.36; 95% confidence interval [CI], 0.13–0.99). Among HIV+ women, unprotected sex was negatively associated with stronger beliefs regarding the protective value of condoms (AOR, 0.07; 95% CI, 0.01–0.67) and concurrent injection-drug use (AOR, 0.19; 95% CI, 0.04–0.99).

CONCLUSIONS: Although the majority of crack using HIV+ crack using women in this sample continued to engage in high-risk sexual activities, they were less likely to do so than HIV− women. Interventions targeting this population are needed.

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INTRODUCTION

Increasing individuals' knowledge of their human immunodeficiency virus (HIV) serostatus to reduce high-risk sexual behaviors among individuals known to be HIV infected (HIV+) is an important HIV-prevention goal in the United States (1). Compared with HIV-seronegative (HIV−) women, HIV+ women report more frequently that they are abstinent or use condoms consistently (2, 3). However, subpopulations of HIV+ women, such as inner-city crack cocaine users, have been noted to engage in high-risk sexual activities, including the exchange of sex for money and drugs (4–6), as do their HIV− counterparts, who have a risk for acquiring HIV infection equal to that of men who have anal intercourse in the same population (7).

Because crack cocaine use is associated with both delayed entry into HIV primary care and reduced medication adherence (8, 9), HIV+ crack-using women are likely to have high viral loads and are at high risk of transmitting HIV to sexual partners (10). In addition, the use of crack cocaine is associated with high rates of sexually transmitted infections and vaginitis (11, 12), which increase the efficacy of HIV transmission (13). Thus, crack-using women are an important group affecting the spread of the HIV epidemic in their communities because of the high risks of becoming infected as well as transmitting to others (7, 14).

Although it is widely acknowledged that drug users engage in more high-risk behaviors than nondrug users, several studies have shown that some HIV+ drug users attempt to reduce high-risk sexual behaviors (15–17). Among HIV+ intravenous drug users who consistently use condoms to protect regular sexual partners from infection, this has been called "informed altruism" (18). However, other studies have shown HIV+ drug users to be especially resistant to reducing sexual risk behaviors (19, 20), perhaps because of social and structural constraints imposed by poverty, unemployment, low levels of education, and addiction (21).

Little attention has been devoted to examining whether knowledge of HIV+ serostatus has led to modification of risk behaviors among seropositive crack cocaine-using women compared with that of their HIV− counterparts. Knowledge

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Selected Abbreviations and Acronyms

HIV = human immunodeficiency virus
HIV+ = human immunodeficiency virus positive
HIV− = human immunodeficiency virus negative
GC = *Neisseria gonorrhoeae*
CT = *Chlamydia trachomatis*
OR = odds ratio
95% CI = 95% confidence interval

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of the impact, if any, of HIV seropositivity self awareness on behavior and attitudes is important for the development of interventions to decrease risk behaviors in this population. In the present study, we compared a sample of HIV+ and HIV− crack-smoking women who were aware of their HIV serostatus with respect to demographics, sexual behaviors, normative beliefs regarding condoms and condom use, and the prevalence of sexually transmitted infections and vaginitis. We also examined correlates of unprotected sex among HIV+ and HIV− crack using women. We hypothesized that, given the highly addictive nature of crack and the social disenfranchisement of these women, risk behaviors would not be significantly reduced in HIV+ users compared with HIV− users.

METHODS

Study Participants

Street outreach workers in Miami, Florida, located, screened, and recruited participants in areas known to have women with a high prevalence of drug use and HIV to participate in this cross-sectional study. Eligible participants were female, at least 18 years of age, English-speaking, self-reported having vaginal or anal sex in the past 30 days, and self-reported having smoked crack or snorted or injected cocaine or heroin in the last 30 days and having not been in drug treatment in the last 30 days. All study forms and procedures were approved by the University of Miami Institutional Review Board.

Laboratory Evaluation

After obtaining informed consent, we administered standardized risk assessment questionnaires to participants (see the section "Study Questionnaire" for details). Each woman underwent a pelvic examination with pH determination, collection of a vaginal swab for wet mount, and cervical swab for nucleic acid testing for *Neisseria gonorrhoeae* (GC) and *Chlamydia trachomatis* (CT; Gen-Probe Inc., San Diego, CA). Potassium hydroxide was applied to the vaginal fluid for the "whiff" test. The wet mount was examined for trichomonas, hyphae, and clue cells for the diagnosis of trichomonas, candidiasis, and bacterial vaginosis, respectively. Diagnosis of bacterial vaginosis was made

using Amsel criteria (22). Blood was obtained from each participant for serologic testing for syphilis (ie, VDRL test and, if positive, FTA-Abs) and HIV (enzyme-linked immunosorbent assay and, if positive, Western Blot). Women were treated as appropriate for vaginitis and cervical infections. Written referrals to the County Health Department were provided to participants for treatment of syphilis and for their sexual partners if they required treatment. Twelve women newly diagnosed with HIV were referred for medical care.

Study Questionnaire

Demographic variables included in the questionnaire were age in years, race/ethnicity, education level, marital status, employment status, income in the past 30 days, whether the participant was living on the streets at the time of interview, whether the participant had ever been in jail or prison, had ever been stabbed/shot or beaten up, or had ever received treatment for HIV. Frequency of crack use was measured as a continuous variable. Drug use variables included current alcohol use (within the last month, less than once per day, greater than once per day), injection drug use, and sharing injection syringes and other injection paraphernalia. Sexual risk variables were whether participants self-reported having main, casual, and paying sex partners and engaging in sex in a crack house. Number of paying sex partners over the last 2 months was reported as a mean. Partner type variables were main/casual/paying partners during the last 2 months.

Participants were asked the percentage of the time they used condoms when having sex during the last 60 days (range was 1 [never] to 4 [always], then dichotomized to always vs. less than always). Engaging in unprotected sex was defined as using condoms less than always or being diagnosed with GC or primary syphilis, indicating unprotected sex within the last 60 days.

Condom beliefs variables (21 items) were measured using a three-level scale according to level of agreement (1 = a little, 2 = somewhat, 3 = a lot), and three meaningful components were derived from principal components factor analysis as described by Bowen et al. (23) These components included: (1) the condoms block romance scale (three items, score range 1–3, $\alpha = 0.70$, the greater the score, the more likely one believes that condoms block romance); (2) the condoms cause problems scale (three items, score range 1–3, $\alpha = 0.70$, the greater the score, the more likely one believes that condoms cause physical problems); and (3) the condoms protect scale (three items, score range 1–3, $\alpha = 0.84$, the greater the scores, the more likely one believes that condoms can prevent diseases).