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Brief counseling for reducing sexual risk and bacterial STIs among drug users—Results from project RESPECT

Salaam Semaan[a,*], Mary Spink Neumann[b], Kathleen Hutchins[c], Laura Hoyt D'Anna[d], Mary L. Kamb[e], for the Project RESPECT Study Group[1]

[a] Centers for Disease Control and Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention, Office of the Director, 1600 Clifton Rd, NE, E-07, Atlanta, GA 30333, United States
[b] Centers for Disease Control and Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention, Division of HIV/AIDS Prevention, 1600 Clifton Rd, NE, E-37, Atlanta, GA 30333, United States
[c] Centers for Disease Control and Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention, Division of STD Prevention, 1600 Clifton Rd, NE, E-63, Atlanta, GA 30333, United States
[d] California State University, Long Beach, Center for Health Care Innovation, 5500 Atherton Street, Suite 400, Long Beach, CA 90815, United States
[e] Centers for Disease Control and Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention, Division of STD Prevention, 1600 Clifton Rd, NE, E-02, Atlanta, GA 30333, United States

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ABSTRACT

Objective: Project RESPECT's brief risk reduction counseling (BRRC) reduced sexual risk and bacterial STIs among at-risk heterosexuals and has been packaged for use with this population. We assessed BRRC's efficacy with RESPECT participants who used drugs and examined BRRC's applicability to present-day users of heroin, cocaine, speedball, or crack.
Methods: We compared baseline demographic and economic variables, risk behaviors, and prevalence and correlates of bacterial STIs for ever-injectors ([EIs], $N = 335$) and never-injectors ([NIs], $N = 3963$). We assessed changes in risk behaviors and bacterial STIs for EIs and NIs at 12 months. We compared prevalence of HSV-2, hepatitis B core antigen virus (HBV), hepatitis C virus (HCV), and trichomonas among EIs with recently reported rates among drug users.
Results: At baseline, 19% of EIs and 29% of NIs had bacterial STIs. Both groups had similar baseline STI correlates. At 12 months, 4% of EIs and 7% of NIs had bacterial STIs. Twelve-month cumulative incidence of bacterial STIs in BRRC was 21% lower among EIs and 18% lower among NIs compared to the informational condition. At 12 months, EIs reported fewer sexual risk behaviors than at baseline. Baseline positivity rates of trichomoniasis in EIs (female: 15%) and in male and female EIs of HSV-2 (39%, 68%), HBV (41%, 37%), and HCV (60%, 58%) were similar to rates in present-day drug users.
Conclusion: Efficacy of BRRC in reducing sexual risk and bacterial STIs in EIs, and similar profiles for EIs and present-day drug users suggest evaluating BRRC with present-day drug users.

1. Introduction

Present-day drug users, whom we define as users of heroin, cocaine, speedball (a mix of heroin and cocaine), or crack have moderate rates of sexually transmitted infections (STIs) (Des Jarlais and Semaan, 2008a,b). However, the literature on reducing STIs among drug users is sparse (Semaan et al., 2007), apparently because of misconceptions that drug users are noncompliant with research protocols, prevention interventions, or medical regimens; have low STI rates; or are not sexually active (Centers for Disease Control and Prevention, 2008a; Malta et al., 2008; Wood et al., 2008). These misconceptions are not supported by the HIV literature (Centers for Disease Control and Prevention, 2008b; Des Jarlais and Semaan, 2008a,b). In fact, HIV rates among injection drug users (IDUs) have decreased during the past two decades because IDUs have lowered their parenteral risk (Centers for Disease Control and Prevention, 2008a; Des Jarlais and Semaan, 2008a,b). As a result, sexual transmission has emerged as a noteworthy source of HIV infection among IDUs and non-injection drug users who inhale, sniff, or smoke illicit drugs (Des Jarlais et al., 2007a,b, 2005; Kral et al., 2001; Semaan et al., 2006; Strathdee et al., 2001). Sexual transmission of HIV is also facilitated by the presence of STIs (Fleming and Wasserheit, 1999). Yet, evaluation of research-based interventions for preventing sexual risk behaviors and bacterial STIs among drug users has received less attention than

* Corresponding author. Tel.: +1 404 639 8870; fax: +1 404 639 3125.
E-mail address: ssemaan@cdc.gov (S. Semaan).
[1] Project RESPECT Group members are listed in the Acknowledgments section.

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interventions for reducing HIV risk from drug use (Semaan et al., 2007).

We sought to identify existing interventions with potential for reducing sexual risk and bacterial STIs among drug users. One such intervention is the brief risk reduction counseling (BRRC) evaluated in Project RESPECT (Kamb et al., 1998). RESPECT's BRRC is one of the packaged interventions disseminated by the Diffusion of Effective Behavioral Interventions project and has been recommended for heterosexuals at high risk for STIs (Centers for Disease Control and Prevention, n.d., 2008c; Kegeles et al., 2000).

We tested the applicability of RESPECT BRRC as an intervention to reduce sexual risk behaviors and bacterial STIs among present-day drug users by analyzing data from RESPECT participants with and without a history of injection drug use [ever-injectors (EIs) vs. never-injectors (NIs)]. We compared those results with the literature on present-day drug users. Data from RESPECT are relevant for several reasons. First, RESPECT was one of the few intervention studies that included EIs and NIs, allowing comparison of these two groups with data from the same project. Second, RESPECT had behavioral and biologic data, allowing for stronger conclusions on intervention efficacy. The diagnoses of bacterial STIs (i.e., gonorrhea, chlamydia, syphilis) and HIV infection were confirmed by laboratory testing. Third, few research interventions have aimed to reduce sexual risk behaviors and bacterial STIs of drug users. Fourth, behavioral and biologic data collected over 12 months help to explain the long-term efficacy of RESPECT BRRC. Finally, recent publications from Project RESPECT continue to provide relevant input for public health (Gottlieb et al., 2004; Thompson et al., 2004; Warner et al., 2004, 2008a,b). Thus, knowing how EIs in RESPECT compare to present-day drug users can guide prevention providers in implementing the already packaged BRRC.

To evaluate the applicability of BRRC for present-day drug users, we assessed three questions. First, how did RESPECT's EIs and NIs, differ, and how did subgroups of EIs vary? Second, were EIs and NIs equally likely to complete the BRRC intervention and provide data at 12 months? Third, how were EIs similar to present-day drug users? The first question is important because RESPECT collected a few variables on drug use and drug risk behaviors. The subgroup analyses are particularly relevant because project RESPECT did not collect data on an adequate number of variables to describe the illicit drug use of participants. The subgroup comparisons allowed us to conjecture which drugs might have been used by EIs and NIs. The second question is relevant because little is known about drug users' completion of sexual prevention interventions and efficacy of such interventions with drug users. The third question is germane because few interventions address bacterial STIs among drug users.

2. Methods

2.1. Study design, setting, and interventions

Details about Project RESPECT are reported elsewhere (Bolu et al., 2004; Kamb et al., 1996, 1998; Peterman et al., 2000). Briefly, this multicenter, randomized, controlled trial (July 1993 to September 1996) evaluated the efficacy of HIV prevention counseling interventions in reducing sexual risk behaviors and incident STIs. HIV-negative sexually active heterosexual adults from five public STD clinics (i.e., Baltimore, MD; Denver, CO; Long Beach, CA; Newark, NJ; and San Francisco, CA) participated in the trial.

Participants were randomly assigned to one of three individual, face-to-face interventions (i.e., enhanced, brief, or informational) with varying durations and contents (Kamb et al., 1996, 1998). Participants in the enhanced RRC received four interactive, counseling sessions based on behavioral change theories (Ajzen and Fishbein, 1980; Bandura, 1977; Becker, 1974). Participants in the BRRC received interactive cognitive and action-oriented goal-setting strategies to reduce sexual risk, based on client-centered HIV counseling (Centers for Disease Control and Prevention, 1993). Participants in the informational arm received didactic messages about HIV and STIs. Participants in all arms received condoms and free treatment for bacterial STIs. Sex partners of participants with bacterial STIs were notified per local health department procedures.

During the RESPECT trial, a few intervention studies for drug users were implemented in three of the cities where RESPECT was conducted. Most of those intervention studies focused on reducing injection risk behaviors (rather than sexual risk) with predominantly community-recruited IDUs (Booth et al., 1996; CDC AIDS Community Demonstration Projects Research Group, 1999; Rhodes and Malotte, 1996; Harris et al., 1998; Latkin et al., 1996). If those interventions had any risk reduction effect on RESPECT participants, we would expect the effect to be similar across all 3 intervention arms.

2.2. Previous analyses

The primary analysis of Project RESPECT (which combined EIs and NIs) demonstrated that personalized, individual counseling reduced incident bacterial STIs (defined as a combined measure for infection with gonorrhea, chlamydia, or syphilis) (Kamb et al., 1998). Both the enhanced and BRRC interventions showed a similar 20% reduction in cumulative, incident, bacterial STIs through 12 months compared with the informational intervention (Kamb et al., 1998). Subsequent subgroup analyses showed that the effect of BRRC on incident bacterial STIs through 12 months was about the same among both EIs and NIs, however, changes in sexual behavior were not examined (Bolu et al., 2004). Based on RESPECT data as reported in Bolu et al., the reduction in bacterial STIs observed among EIs (21%, risk ratio (RR) = 0.79, 95% confidence interval (CI) = 0.33–1.85) was similar to the reduction observed among NIs (18%, RR = 0.82, CI = 0.67–0.99).

2.3. Current analysis

For this analysis, we used de-identified interview data (i.e., demographic and economic variables and risk behaviors) and bacterial STI data collected at baseline and at 12 months postintervention. We used responses to the baseline question, "Have you ever used a needle to shoot drugs or steroids into your veins or under your skin?" to categorize participants as EIs or NIs. Accordingly, EIs are individuals who reported ever injecting illicit drugs at any time before enrollment in RESPECT. NIs are individuals who reported never injecting illicit drugs, although some might have smoked, inhaled, or ingested illicit drugs (based on sexual risk behaviors associated with alcohol or drug use and on exchange sex, Table 1). The proportion of NIs who might have used non-injection drugs cannot be determined because RESPECT did not collect data on the type of illicit drugs used by EIs and NIs. Baseline data on drug use behaviors were limited to use of needles during the past 3 months and ever-sharing drug paraphernalia.

We conducted subgroup analyses for EIs based on their recent use of needles (past 3 months), and for EIs and NIs, by whether or not they were infected with hepatitis C virus (HCV) (a marker for injection drug use). We compared the demographic and economic variables, sexual risk behaviors, and infections of recent injectors ($n = 83$, EIs who used needles to shoot drugs or steroids in the past 3 months) with former injectors ($n = 252$, EIs who used needles to shoot drugs or steroids more than 3 months ago). We also compared the demographic and economic variables, risk behaviors, and infection rates for bacterial STIs, HSV-2, HBV, and trichomonas among EIs and NIs who were infected and not infected with HCV (all biologic data were based on tests conducted by RESPECT).

Bivariate and multivariate independent correlates of bacterial STIs included demographic and economic variables, sexual risk, sexual risk associated with drug use, and prior HIV testing behavior. We analyzed these correlates because of their associations with bacterial STIs among drug users (Semaan et al., 2007) and other populations (Buffardi et al., 2008). Similar to previous RESPECT analyses, we defined the dependent variable as having any of the three bacterial STIs (Bolu et al., 2004; Kamb et al., 1998). We analyzed the baseline data and correlates of bacterial STIs separately for EIs and NIs (combining all intervention arms) and analyzed changes in STIs and sexual risk behaviors separately for EIs and NIs at 12 months.

Infection rates among present-day drug users were based on recent publications (2005–early 2009) and systematic reviews of studies with users of heroin, cocaine, speedball, and crack (1995–early 2005) (Des Jarlais and Semaan, 2008a,b; Semaan et al., 2007).

2.4. Statistical analysis

We used chi-square or t-tests to compare EIs and NIs, and their subgroups, at baseline, using median cut-off points to dichotomize continuous variables that were not normally distributed.

For baseline correlates of bacterial STIs, we conducted bivariate analyses (crude, unadjusted odds ratios [ORs] and 95% CIs) and multivariate logistic regression (adjusted OR and 95% CI) separately for EIs and NIs. Variables that were associated in the bivariate analysis ($p < 0.05$) with bacterial STIs were included in the multiple logistic regression analysis. Because of the small number of incident STIs among EIs at 12 months, we did not conduct multivariate regression analysis at 12 months.

We compared EIs' and NIs' on attendance of intervention sessions, provision of data at 12 months, changes in sexual risk behaviors reported for the prior 3 months at 12-month follow-up, and STI diagnoses at 12 months. In addition, we assessed whether failure to provide 12-month data was associated with systematic biases between those who provided baseline and 12-month data.