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Comparison of two measures of HIV sexual risk behavior in women in outpatient drug treatment programs

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Abstract

Objectives—HIV/STD sexual risk behavior is common among women who use drugs. To effectively implement interventions in busy drug treatment programs, it is important to have a rapid and accurate measure of sexual risk. This study compared two dichotomous ratings of unprotected sex among women in substance abuse treatment who participated in a HIV sexual risk reduction clinical trial: 1) any unprotected vaginal/anal sex occasions in the past 3 months; versus 2) unprotected vaginal/anal sex at last sexual occasion (LSO).

Methods—Sexually active women from 12 methadone maintenance or psychosocial outpatient programs who had a main (n = 363) or other male partner(s) (n = 117) were assessed at baseline for unprotected sex in the last 3 months and at LSO. These two measures were compared for congruence.

Results—Participants who reported unprotected sex at LSO consistently reported at least one unprotected sex occasion in the past 3 months: 99.1% for main male partner sex and 93.8% for other male partner sex. Participants who reported using a condom at LSO were less consistent: of those reporting condom use at LSO, only 30.3% reported protected sex at all sex occasions in the past 3 months with main male partner and only 67.6% for other male partner(s).

Conclusions—Use of one question about condom protected sex at LSO appears to be a partially useful tool. It can be useful for detecting sexual risk in clinical or research settings where the central focus is not on sexual behavior or when time is limited.

Keywords

HIV/STD; substance abuse; women's health; sexual risk factor

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Conflicts of Interest

Dr. Thorens, Dr. Hu, Dr. Pavlicova, and Dr. Tross have no conflicts of interest to report.

INTRODUCTION

In the United States, heterosexual transmission is the primary HIV risk factor among women (CDC, 2012). Women who use drugs, even when they are in drug treatment, are at heightened risk – due to heterosexual relationships with male drug users, as well as ongoing drug use. HIV safer sexual behavior, especially the use of condoms, remains the primary means of HIV prevention. As long as this is true, brief and accurate means of assessing sexual risk are essential. With appropriate tools, women at higher risk could be readily identified and linked to HIV prevention interventions, HIV rapid testing, and, if positive, HIV Antiretroviral Treatment (ART).

The HIV sexual risk behavior literature presents a variety of approaches to measurement representing complementary advantages and limitations. Schroder et al. (2003a) distinguish absolute counts of behavior as singularly ‘valid indicators of HIV contraction risk’ (p. 76). Such counts have the advantages of better capturing (1) representative behavior and (2) cumulative risk of infection (Schroder et al., 2003b). However, their use of extended timeframes (e.g., 1 month, 3 months, 6 months, etc.) for self-report may pose challenges to recall, and thus, accuracy (Napper et al., 2010). In contrast, other reviews highlight the superior accuracy of event-level analysis. Focusing on a single, recent occasion, the crucial contextual features (e.g., condom use, use of specific substances, partner type, etc.) of the individual’s sexual risk behavior can be reported with maximal accuracy (Vosburgh et al., 2012).

Community drug treatment programs are often high volume, fast-paced settings in which there is neither time, staffing, nor resources for dedicated HIV sexual risk assessment and sexual prevention intervention. At the same time, these activities are imperative for populations frequently at higher sexual risk for HIV, secondary to often ongoing drug and alcohol use. Thus, the current study compares two measures of sexual risk behavior considered to present different degrees of ease and brevity, on the one hand, and of representativeness, on the other hand. In particular: the study uses dichotomous rating of condom use, at last vaginal/anal sexual occasion (LSO), as a simple, easy-to-recall, potentially more accurate measure of sexual risk behavior. The study contrasts this with using the count of (condom-) unprotected sexual occasions, over the past 3 months, as a basis for dichotomous rating, as a potentially more representative measure of recent sexual risk behavior.

METHODS

Baseline data were drawn from a National Drug Abuse Treatment Clinical Trials Network (CTN) multi-site randomized clinical trial (CTN-0019), testing the effectiveness of a 5-session safer sex skills building group intervention, compared to a single-session HIV education control group (i.e., serving as Treatment-as-Usual). Description of methods and results of primary outcome analysis have been previously published (Tross et al., 2008). The study was approved by the Institutional Review Boards of Columbia University/New York State Psychiatric Institute and at all 12 clinical sites, as well as an independent Data Safety

and Monitoring Board appointed by NIDA. All participants gave written informed consent at screening and, if eligible, again at study entry. Participants were 515 women in 12 methadone maintenance or psychosocial outpatient treatment programs. The current analyses included women who were sexually active in the 3 months prior to baseline assessment with a main male partner (n=363) or other male partner(s) (n=117). Sexual risk behavior was assessed using a computer-assisted structured self-interview.

Measures

The Sexual Experiences and Risk Behavior Assessment Schedule (SERBAS) (Meyer-Bahlburg et al., 1991) elicited counts of (condom-) unprotected vaginal or anal sex occasions by partner type (i.e., main versus other partners) in the three months prior to baseline. Participants were classified as either (1) consistently using condoms or (2) inconsistently using condoms (i.e., one unprotected sex occasion), with each partner type. For assessment of condom-protected sex at LSO with each partner type, participants were asked to indicate whether or not a condom was used at their LSO (of vaginal or anal sex). The two assessments differ markedly in terms of ease and brevity. The SERBAS assessment consists of several counts of sex occasions over the past three months, with main male partner and other male partners, separately. Counts of vaginal and anal sex occasions are obtained, and, within them, counts of these occasions that were condom-protected are obtained. The length of assessment is variable – depending on the sexual activity of the individual. For individuals with both partner types, and both types of behavior, this is at least several minutes. In contrast, the LSO assessment asks the individual to recall last sex occasion, with each partner type separately, and to report whether it was condom-protected or –unprotected. This typically requires two minutes or less to ascertain.

Statistical analysis

Two-by-two contingency tables were constructed, respectively, for sex with main male partner and other male partners. Numbers and percentages of participants in each of four cells are presented: (1) unprotected sex at last sexual occasion (Yes/No), in the rows; and (2) any unprotected sex in the past 3 months (Yes/No), in the columns.

RESULTS

Table 1 shows the results of a two-by-two contingency table for condom-protected (versus unprotected) sex with main partners. Among 363 sexually active women with a main male partner, 350 (96.4%) reported at least one unprotected sex occasion in the past 3 months and 330 (90.9%) reported unprotected sex at LSO. Only 3 (0.8%) women gave divergent reports (i.e. reported unprotected sex at LSO but no occasions of unprotected sex in the past 3 months). Of the 350 women who reported at least one unprotected sexual occasion in the past 3 months, 327 (93.4%) reported unprotected sex at LSO, and 23 (6.6%) reported protected sex at LSO. Of the 33 women who reported protected sex at LSO, 10 (30.3%) also reported protected sex at all occasions in the past 3 months (95% CI: 16.2%–48.9%). Of the 330 women who reported unprotected sex at LSO, 327 (99.1%) reported at least one unprotected sexual occasion in the past 3 months (95% CI: 97.1%–99.8%).

Table 2 shows the results of a contingency table for condom-protected (versus unprotected) sex with other male partners. Among 117 sexually active women with other male partners, 87 (74.4%) reported at least one unprotected sex occasion in the past 3 months and 80 (68.4%) reported unprotected sex at LSO. Five (4.3%) women gave divergent reports (i.e. reported unprotected sex at LSO but protected sex at all occasions in the past 3 months). Of 87 women who reported at least one unprotected sexual occasion in the past 3 months, 75 (86.2%) reported unprotected sex at LSO, and 12 (13.8%) reported protected sex at LSO. Of the 37 women who reported protected sex at LSO, 25 (67.6%) also reported protected sex at all occasions in the past 3 months (95% CI: 50.1%–81.5%). Of the 80 women who reported unprotected sex at LSO, 75 (93.8%) also reported at least one unprotected sexual occasion in the past 3 months (95% CI: 85.4%–97.7%).

DISCUSSION

The current analyses compared two measures of HIV sexual risk behavior in women who use drugs participating in a NIDA CTN HIV risk reduction study at 12 community-based substance abuse treatment programs. It should be noted that unprotected sex with main male partners was far more frequent than with other male partners. This emphasizes the importance of highlighting sexual risk with main male partners in HIV safer sex interventions.

Dichotomous ratings of condom-protected (versus unprotected) sex at last sexual occasion (LSO) (measured by one question about protected or unprotected sex during the last vaginal/anal sexual act with a main male partner and with other male partner(s)) and unprotected sex in the past 3 months similarly categorized the vast majority of women in substance abuse treatment programs. Women who reported unprotected sex at LSO almost always reported unprotected sex (one occasion) in the past 3 months (99.1% for those with a main male partner and 93.8% for those with other male partners). On the contrary, women who reported engaging in protected sex at LSO were not consistently indicating protected sex (across all occasions) in the past 3 months (30.3% for those with a main male partner and 67.6% for those with other male partners).

Limitations

The rationale for this approach was to test the usefulness of two brief questions for use in busy, community drug treatment programs. The use of dichotomous measures of protected (versus unprotected) sex (i.e. for most recent sexual occasion and past 3-month periods) only permitted categorization of participants as having or not having engaged in unprotected sex. The study did not examine continuous measures of unprotected sex, ordinal measures of relative frequency of condom use, or other components of sexual risk behavior. It did not assess actual STD or HIV infection – which would have required a much larger sample. However, unprotected sex has long been a strong link to infection transmission. Further, while statistical modeling, to understand discrepant reports of sexual risk behavior (i.e. on most recent sex occasion and past three-month sex occasions) would have been informative, this was not feasible. This was because cell sizes were too small for meaningful analysis.

In addition, two features of the study limit the generalizability of study findings to the likely experience in community programs. First: The informed consent process of the safer sex skills building trial, in which the data were obtained, was an easier context in which to ask single questions about sexual behavior – than that of a community program. Second: The use of a computer-based interview in the trial, is a different context for assessment than staff-delivered questions in a community program. However, with recent rapid promotion of Electronic Medical Records in community programs, administration of a computer- or tablet- based question might soon be feasible in community programs.

CONCLUSIONS

In the U.S., women who use drugs are at heightened susceptibility to HIV/STD heterosexual transmission. Drug treatment is a critical juncture at which to provide HIV/STD risk assessment, testing, risk reduction interventions, and linkage to treatment, as needed. In busy settings, where sexual risk behavior is not the central focus, brief assessments of sexual risk behavior can be useful. This study suggests that participants' report of unprotected sex at last sexual occasion is a good indicator of the presence of sexual risk behavior over the past 3 months. However, if participants report condom-protected sex, at last sexual occasion, follow-up questions are necessary to adequately assess sexual risk behavior over the prior 3 month time period.

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TABLE 1

Last sexual occasion (LSO) versus Past Three Month Classification of Protected (versus Unprotected)
Vaginal/Anal Sex with Main Male Partners (n=363)

	Past Three Months		Total
	All protected	(1) unprotected	
Last Sexual Occasion	N (%)		
Protected	10 (2.8)	23 (6.3)	33 (9.1)
Unprotected	3 (0.8)	327 (90.1)	330 (90.9)
Total	13 (3.6)	350 (96.4)	363 (100)

TABLE 2

Last sexual occasion versus Past Three Month Classification of Protected (versus Unprotected) Vaginal/Anal Sex with Other Male Partners (n=117)

	Past Three Months		Total
	All protected	(1) unprotected	
Last Sexual Occasion	N (%)		
Protected	25 (21.4)	12 (10.3)	37 (31.6)
Unprotected	5 (4.3)	75 (64.1)	80 (68.4)
Total	30 (25.6)	87 (74.4)	117 (100)