Differences in HIV-Related Knowledge, Attitudes, and Behavior among Psychiatric Outpatients With and Without a History of a Sexually Transmitted Infection

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Abstract

HIV infection among the mentally ill is estimated to be at least eight times the prevalence in the general population. Psychiatric patients may also be disproportionately vulnerable to other sexually transmitted infections (STIs), but this has not been well studied. We sought to characterize the prevalence and correlates of STIs in a sample of psychiatric outpatients ($N = 464$). Over one-third of the sample (38%) reported a lifetime history of one or more STIs. Multivariate analyses showed that, relative to those without an STI history, patients with a lifetime STI history were more knowledgeable about HIV, expressed stronger intentions to use condoms, and perceived themselves to be at greater risk for HIV. However, those with a past STI were also more likely to report sex with multiple partners and reported more frequent unprotected sex in the past 3 months. Treatment for an STI may increase HIV knowledge and risk reduction motivation, but does not necessarily lead to changes in sexual risk behavior among psychiatric patients. Findings highlight the need for STI/HIV risk reduction interventions in psychiatric settings, particularly for patients with high-risk profiles.

The prevalence of HIV infection among people living with a mental illness is as much as eight times the prevalence in the general population (Carey, Weinhardt, & Carey, 1995; Rosenberg et al., 2001). Research on HIV infection among psychiatric patients has typically focused on individuals experiencing chronic and pervasive impairment in function related to a major mood disorder (i.e., depression and bipolar disorder) or a schizophrenia-spectrum disorder. Across these disorders, psychiatric symptoms, stigma, and other life challenges may reduce the salience of non-mental (i.e., somatic) health concerns, including HIV (Carey, Carey, Weinhardt, & Gordon, 1997; Kalichman, Kelly, Johnson, & Bulto, 1994). Further, because of cognitive, social skills, and problem solving deficits, many patients with mental illness lack the requisite skills needed to negotiate safer sex (Carey et al., 1997; Gordon, Carey, Carey, Maisto, & Weinhardt, 1999; Kelly et al., 1995). Indirect factors, including the co-occurrence of substance use disorders, high levels of poverty and homelessness, and the intermingling of sexual activity within risky sexual networks, may also account for elevated risk for HIV among the mentally ill (Carey, Carey, Maisto, Gordon, & Vanable, 2001; McKinnon, Cournos, & Herman, 2001; Otto-Salaj, Heckman, Stevenson, & Kelly, 1998).

Few studies address the occurrence of STIs other than HIV among the mentally ill. Indeed, psychosocial, behavioral, and environmental factors that underlie elevated rates of HIV among the mentally ill are likely to confer increased risk for many other STIs. Recent findings from a multisite study of patients receiving care for a severe mental illness confirm that STIs other than HIV are a major health concern (Rosenberg et al., 2001). Across 7 psychiatric clinics in four U.S. States ($N = 931$), 31% of patients reported a lifetime history of an STI. Further, the

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observed seroprevalence rates of hepatitis B (23%) and C (20%) were approximately 5 and 11 times the overall estimated population rates for these STIs respectively. Mirroring these findings, results from an STI screening study indicated that 20% of patients seen for emergency psychiatric care tested positive for a non HIV-related STI (Sitzman, Burch, Bartlett, & Urrutia, 1995). Studies conducted in STI treatment settings also point to high rates of psychopathology. For example, among 201 consecutive patients seen for STI care in a publicly funded STI clinic, 45% met criteria for an Axis I disorder as determined by a structured clinical interview (Erbelding, Hutton, Zenilman, Hunt, & Lyketsos, 2004).

Thus, initial findings highlight that STIs other than HIV are an under-recognized health concern within psychiatric settings. In the US, an estimated 15 million people become infected with an STI each year (Cates, 1999). Often referred to as a "hidden epidemic," many people remain unaware of the broad impact and serious health consequences of STIs (IOM, 1997). When left untreated, commonly occurring STIs can lead to severe, long term health problems, including infertility, complications during pregnancy, and several forms of life-threatening cancer. Untreated STIs also enhance a person's susceptibility to HIV infection, further highlighting the importance of early STI detection and treatment. Research that characterizes the prevalence and correlates of STIs among vulnerable subpopulations – including people with mental illness – is of considerable importance because it helps to inform prevention efforts and guide policy recommendations.

We sought to characterize the prevalence and correlates of lifetime STIs in a sample of sexually active psychiatric outpatients. We first present data on demographic, psychiatric, and substance use differences among patients with and without a lifetime STI. Next, we present data on the relationship between an STI history and current HIV-related knowledge, risk reduction motivation, and sexual risk behavior. Several studies indicate that treatment for an STI is associated with a short term reduction in sexual risk behavior (Crosby et al., 2004; Fortenberry, Brizendine, Katz, & Orr, 2002), suggesting that an STI diagnosis may serve as a "cue to action" for risk reduction. Thus, consistent with prior research and prominent conceptual formulations of sexual risk behavior (Fishbein, 2000; Fisher & Fisher, 1992; Rosenstock, Strecher, & Becker, 1994), we hypothesized that patients with a prior STI diagnosis would be sensitized to their heightened risk for HIV and, therefore, would report more favorable attitudes towards risk reduction, greater HIV knowledge, and higher levels of perceived vulnerability to HIV. We also hypothesized that participants with a past history of an STI would report fewer episodes of recent unprotected sex relative to patients without an STI history.

Method

Participants

Participants were recruited from two not-for-profit psychiatric hospitals for participation in a Randomized Clinical Trial (RCT) evaluating methods for reducing HIV-related risk behaviors and harmful substance use (Carey et al., 2004); the current analyses focus on data gathered during the baseline assessment. Eligibility for the RCT was limited to adult patients who were sexually active and reported alcohol or drug use in the past year. Of the 1,027 patients who met initial eligibility criteria and were recruited for the pre-intervention baseline assessment, 685 consented to participate, among whom 464 actually completed the full assessment. The mean age of participants was 37 years ($SD = 9.7$); the ethnic composition consisted of 67% White, 22% African-American, and 11% "other." Participants reported an average monthly income of less than $600 and a majority of participants (82%) were unemployed. Psychiatric diagnoses, as determined by a Structured Clinical Interview (SCID) for the *DSM-IV* (First, Spitzer, Gibbon, & Williams, 1995), consisted of 16% schizophrenia disorder (schizophrenia, schizophreniform disorder, or psychotic disorder NOS), 14% schizoaffective disorder, 18% bipolar disorder, 46% depressive disorder, and 7% "other." Patients reported a lifetime average

of 5.9 psychiatric hospitalizations (*SD* = 15.3). Fifty nine percent of participants reported one or more episodes of unprotected vaginal or anal sex during the past 3 months.

Procedure

During standard care, a brief screening interview was used to identify patients who were sexually active and had used alcohol or recreational drugs in the previous year. Eligible patients were invited to participate in an in-depth assessment, which included a SCID interview to establish current psychiatric diagnosis, as well as a brief mental status assessment. Patients agreeing to participate in the assessment completed a detailed consent form approved by Institutional Review Boards at Syracuse University and at each hospital. To offset travel and related expenses, patients were reimbursed $30 to complete the extensive (4 to 6 hour) assessment.

Demographic, Psychiatric, and Substance Use Measures

Demographic characteristics—Participant age, gender, marital status, ethnicity, income, educational attainment, and employment status were obtained through a structured interview.

***Alcohol Use Disorders Identification Test* (Saunders, Aasland, Babor, de la Fuente, & Grant, 1993)**—The AUDIT is a validated 10-item self-report instrument designed to identify individuals for whom the use of alcohol places them at risk for alcohol problems or who are already experiencing such problems. Summary scores range from 0 – 40. Prior research with persons living with a severe and persistent mental illness indicate that the AUDIT can be reliably administered and that a cut-point of 7 maximizes sensitivity and specificity scores for identifying those with an alcohol-related disorder (Maisto, Carey, Carey, Gordon, & Gleason, 2000). Coefficient alpha in the current sample was .90, providing strong evidence of measurement reliability.

***Drug Abuse Screening Test* (Skinner, 1982)**—The DAST-10 is a short version of the 28-item DAST, designed to identify drug-use related problems in the previous year. A single summary score reflects the number of drug abuse items endorsed. Research indicates that the DAST-10 is able to discriminate between psychiatric outpatients with and without current drug abuse/dependence diagnoses (Cocco & Carey, 1998). Sensitivity and specificity with this population are optimized with a score of 3 or greater (Maisto et al., 2000). Cronbach's alpha in the current sample was .83, reflecting a high degree of internal consistency.

***Structured Clinical Interview for the Diagnostic and Statistical Manual of Mental Disorders* (First et al., 1995)**—The psychotic, mood, and substance use disorders modules of the SCID-Patient Version were administered to all participants. Interviews were videotaped for the purpose of providing supervision and determining inter-rater reliability. The SCID interview typically lasted between 60 and 90 minutes, and was administered during a single session. To determine the reliability of the primary diagnoses yielded by the SCID, a second trained interviewer who was blind to diagnoses viewed a randomly sampled subset (*n* = 37) of videotapes and provided independent scoring of the SCID. There was 84% exact agreement for primary diagnosis on this subset of interviews. This agreement rate indicates a moderately high degree of reliability. SCID indices used in this study consisted of the primary Axis I psychiatric diagnosis and the clinician rated Global Assessment of Functioning (GAF) score.

***Brief Symptom Inventory* (Derogatis & Spencer, 1983)**—The BSI is a 53-item short form of the Symptom Checklist 90-Revised, an instrument designed to assess a range of psychiatric symptoms occurring within the last week. The BSI requires 10 minutes to complete; participants indicate the degree to which they were distressed by each symptom in the last week on a scale from 0 (not at all) to 4 (extremely). The Global Severity Index (GSI) derived from

this self-report inventory is an index of overall symptom severity/psychological distress. In the present sample, the coefficient alpha for the global severity index (all items combined) was .97.

HIV-Related Measures

***HIV Knowledge Questionnaire* (Carey, Morrison, & Johnson, 1997)—**The HIV-KQ was used to assess knowledge related to HIV transmission and prevention. The HIV-KQ contains 45 statements and patients were asked to indicate whether the statements were true or false, or to state that they did not know. Factor analyses with diverse samples indicated that the HIV-KQ contains a single factor, is internally consistent (alpha = .91), and is stable over 2-week ($r = .91$) and 12-week ($r = .90$) intervals (Carey et al., 1997). The HIV-KQ was reliable in the current sample (alpha = .86).

Sexual risk reduction motivation—Motivation was measured with 19 items that assessed condom attitudes, condom use behavioral intentions, and perceived vulnerability to HIV. *Condom attitudes* were assessed using 10 self-report items adapted from a previously validated measure (Sacco, Levine, Reed, & Thompson, 1991). Items assessing participant attitudes about condom use were rated on a 6-point Likert scale (ranging from 1 = *strongly disagree* to 6 = *Strongly Agree*). The coefficient alpha for the condom attitudes scale was .74. *Behavioral intentions for safer sexual activities* were assessed using a 6-item measure adapted from prior research with economically disadvantaged women (Carey et al., 1997). Participants were presented with a scenario describing a sexual situation, and asked to rate the likelihood of engaging in various protective behaviors (e.g., "I will tell the person that we need to practice safer sex.") and risky sexual behaviors (e.g., "I will drink or use drugs before sex.") using a six-point scale (0 = *Definitely will not do* to 5 = *Definitely will do*). Psychometric analyses indicate that the safer sex behavioral intentions measure was reliable in the current sample (alpha = .89). *Perceived risk for HIV* was measured using a 3-item scale adapted from our previous work (Carey et al., 1997). Participants rated the likelihood of contracting HIV "in the next year," and "some day." In addition, participants rated the likelihood that that a "person like you" will someday get HIV. Response options ranged from "No risk at all" to "Extremely at risk." The coefficient alpha in the current sample was .89.

Sexual risk behavior—The time-line follow-back procedure (Carey, Carey, Maisto, Gordon, & Weinhardt, 2001) was used to assess sexual risk behavior over a 3 month interval. The TLFB involves presenting the subject with a calendar on which the target interval is marked; the sexual activity and drinking status of each day were recorded, employing strategies such as identifying extended periods of use/no use, special days (e.g., holidays), and patterned behavior. Sexual behavior outcome measures for this study consisted of a count of total number of instances of unprotected vaginal and anal sex, a measure of the proportion of sexual occasions (vaginal and anal) during which a condom was used, and a dichotomous measure indicating whether the participant reported having sex with multiple partners (yes or no), all assessed for the previous 3 months. STI history was assessed with two items that assessed the number of STIs experienced for the past year and lifetime (e.g., "In your lifetime, how many times have you had a sexually transmitted disease such as Syphilis, Gonorrhea, Herpes, or Chlamydia?").

Overview of Analyses

Statistical tests were two-tailed, and alpha was set at .05. Because the distribution of scores on the frequency measure of unprotected anal and vaginal sex was extremely skewed, frequency of unprotected sex was truncated at 105 (>98th percentile), and the variable was then transformed using the formula ($log_{10} X+1$). First, descriptive analyses are presented to characterize the demographic correlates of STIs. Second, study hypotheses are tested using a

series of univariate statistics to contrast psychosocial and behavioral differences among patients with and without a lifetime history of an STI. Finally, univariate correlates of STIs are included in a multivariate logistic regression analysis to characterize the independent contributions of HIV-related risk reduction information, motivation, and behavior in distinguishing patients with and without an STI history. Adjusted odds ratios and 95% confidence intervals are presented to indicate the ratio of the odds of STI status for persons with a given risk factor relative to those without the risk factor. For these analyses, categorical variables with more than two levels were recoded into dichotomous indicators using standard dummy coding procedures.

Results

Prevalence and Univariate Correlates of Lifetime STIs

Over one-third of the sample (38%) reported a lifetime history of one or more STIs, and 8% reported an STI diagnosis during the previous year. Among those with a lifetime history of an STI, 52% reported that they had experienced two or more STIs ($M = 2.43$, $SD = 2.90$). Table 1 shows the demographic, substance use, and psychiatric characteristics of patients with and without a lifetime history of an STI. Patients reporting a lifetime STI were more likely to be African-American ($p < .0001$), unmarried ($p < .05$), and unemployed ($p < .05$). STI history did not vary as a function of educational attainment, gender, age, or income. As shown in Table 1, STI history did not vary as a function of psychiatric diagnosis. In addition, patients with and without a prior STI did not vary in terms of their reported level of current psychological distress or in terms of overall functional impairment as assessed by the clinician rated global assessment of functioning scale. Relative to patients with no prior STI, those reporting one or more lifetime STIs were more likely (at trend level) to screen positive for drug-related problems as assessed by the DAST (33% vs. 24%, $p < .055$), but did not differ in terms of risk for alcohol-related problems as assessed by the AUDIT.

We had hypothesized that patients with a prior STI diagnosis would report more favorable attitudes towards risk reduction, greater HIV knowledge, and higher levels of perceived vulnerability to HIV. As shown in Table 2, these hypotheses were largely confirmed. Compared to patients with no prior STIs, those with one or more lifetime STIs scored higher on the HIV knowledge questionnaire ($p < .01$), perceived themselves to be at greater risk for HIV ($p < .0001$), and reported stronger intentions to use condoms in the future ($p < .02$). Condom attitudes did not vary as a function of STI history.

Although STI history was associated with more favorable risk-reduction attitudes, an opposite trend emerged with regard to sexual risk behavior data (see Table 2). Compared to participants with no prior STIs, a positive STI history was associated with greater frequency of unprotected vaginal and anal sex ($p < .05$) and greater likelihood of reporting sex with multiple partners in the past 3 months ($p < .02$). The proportion of condom protected occasions of sex did not vary as a function of STI history.

Multivariate Predictors of Lifetime STIs

A hierarchical logistic regression analysis was conducted to characterize the independent contributions of HIV-related information, motivation, and sexual risk behavior in distinguishing patients with and without an STI history. Previously identified demographic correlates of STI history (marital status, employment status, and ethnicity) were entered in Step 1, followed by psychosocial and behavioral constructs identified in univariate analyses as differing as a function of STI history. Findings were largely consistent with univariate analyses. After controlling for demographic factors, HIV-related knowledge (Wald $\chi^2 = 12.2$, $p < .0001$), greater self-perceived HIV risk (Wald $\chi^2 = 9.0$, $p < .005$), and higher condom use behavioral

intentions (Wald $\chi^2 = 13.2$, $p < .001$) emerged as significant correlates of a prior STI (ΔModel $\chi^2 = 40.5$, $p < .0001$). The frequency count of unprotected vaginal and anal sex also remained as a significant predictor of STI history (Wald $\chi^2 = 5.01$, $p < .02$), with higher rates of sexual risk being positively associated with a past STI diagnosis. Although sex with multiple partners and DAST scores were associated with STI history in univariate analyses, these variables did not emerge as multivariate predictors of STI history.

Discussion

Elevated HIV seroprevalence rates have been widely documented in studies of men and women receiving care for a mental illness. Although sexual behaviors that confer risk for HIV also heighten risk for a host of other STIs, this study is one of only a few to document patterns and correlates of non-HIV related STIs among psychiatric patients. Consistent with other recent reports (Erbelding, Hummel, Hogan, & Zenilman, 2001; Erbelding et al., 2004; Rosenberg et al., 2001; Sitzman et al., 1995), 38% of our sample reported a lifetime STI, and 8% reported experiencing an STI within the past year. Because STIs often show few if any symptoms and our study did not involve STI testing, prevalence rates reported here likely represent an underestimate of the actual number of STIs. In a study of the general population, Laumann et al. (Laumann, Gagnon, Michael, & Michaels, 1994) found that 16.9% of the general population reported a lifetime STI. It is difficult to compare rates across studies that vary widely in their sampling and assessment methods. Nonetheless, the rates found in our study indicate that further investigation of the epidemiology of STIs among persons with mental illness is warranted.

Also consistent with broader epidemiological trends observed in population-based samples (IOM, 1997), patients reporting a lifetime STI history were more likely to be of non-White race/ethnicity, unmarried, and unemployed. Although prior research points to higher rates of sexual risk behavior among psychiatric patients with non-schizophrenia spectrum diagnoses (Carey et al., 2001; Carey et al., 2004), multivariate analyses revealed no differences in STI rates as a function of diagnosis, psychological distress, or functional impairment. Similarly, risk for alcohol and drug dependence over the last year did not emerge as a multivariate predictor of STI history, despite findings indicating higher rates of HIV risk behavior among heavy substance users (Cooper & Orcutt, 2000; McKinnon et al., 2001; Vanable et al., 2004). It may be that psychiatric symptoms and substance use patterns are more sensitive as predictors of *current* sexual behavior patterns rather than lifetime sexual health habits.

The experience of being diagnosed and treated for an STI may heighten awareness and serve as a "cue to action" for behavior change to reduce subsequent STI and HIV risk. On this basis, we had hypothesized that patients with a lifetime STI history would report superior HIV knowledge, more favorable attitudes towards risk reduction, and lower rates of current sexual risk behavior. These hypotheses were only partially confirmed; those with an STI diagnosis were more knowledgeable about HIV and expressed more favorable attitudes towards risk reduction, but they also reported higher rates of sexual risk behavior relative to patients without an STI history. Thus, diagnosis and treatment for STIs may increase HIV-related awareness and knowledge, but they do not necessarily lead to changes in sexual risk behavior. Theoretical frameworks such as the Information-Motivation-Behavioral-Skills model suggest that knowledge and motivation need to be supplemented with specific skills in order to effectively change risk behavior (Fisher & Fisher, 1992).

Most publicly funded STI clinics are mandated to provide risk-reduction counseling. However, with a few notable exceptions (Coury-Doniger, Levenkron, McGrath, Knox, & Urban, 2000; Kamb et al., 1998), clinic-based risk-reduction counseling is limited to didactic messages concerning methods to reduce risks for STIs and HIV, with little emphasis on skills training

required to achieve lasting change. The trends observed in this sample may reflect this emphasis. As a result of receiving STI care, psychiatric patients in our sample may have experienced heightened awareness of their vulnerability to STIs (including HIV) and became more knowledgeable about HIV. However, without more intensive risk-reduction counseling, these patients maintained the same risky sexual behavior patterns that made them vulnerable to an STI in the first place.

Increasing awareness of HIV as a major health concern in psychiatric settings has led to the development of HIV risk-reduction interventions that are tailored to the needs of the mentally ill (Carey et al., 2004). Further, practice guidelines recommend that patients receiving psychiatric care undergo routine screening for HIV as part of standard care (Cournos & Bakalar, 1996). Although continued HIV risk reduction efforts are clearly warranted, our findings highlight the need for an expanded focus on diagnostic screening and risk reduction programs that target *both* HIV and other more commonly occurring STIs. Fortunately, several promising intensive HIV risk reduction interventions developed for psychiatric patients could be adapted for use as interventions to reduce risks for both HIV and STI risks (Carey et al., 2004; Otto-Salaj, Kelly, Stevenson, Hoffman, & Kalichman, 2001). Promoting awareness of the high prevalence rates of STIs among people with mental illness could strengthen HIV prevention efforts by highlighting patients' perceived susceptibility to a wide range of health problems that can result from risky sexual behavior.

Our study involved cross-sectional analyses that examined the association of current knowledge, attitudes and behaviors to lifetime STI diagnoses. Although intriguing, inferences concerning a temporal association between past STI treatment and subsequent changes in behavior require confirmation with prospective studies. Other study limitations include the absence of biologically confirmed STI diagnoses and the fact that our a sample was limited to psychiatric patients who reported sexual activity within the past year. A broader recruitment strategy that includes less sexually active patients would likely yield lower overall STI rates.

In conclusion, the current study is one of the first to report data on attitudinal, behavioral, and psychiatric factors associated with STIs among persons with mental illness. Our findings suggest elevated lifetime STI rates among psychiatric patients and support the need for sexual health services in psychiatric settings that include skills-training to reduce high-risk sexual behavior, along with the provision of information about STIs and how they are contracted. Ample evidence suggests that sexual health services offered within psychiatric settings can be effective in reducing risk behavior, with anticipated positive benefits to patients and the communities where they live and receive care.

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Table 1

Demographic, Psychiatric, and Substance Use Characteristics of Psychiatric Outpatients with and Without a Lifetime History of a Sexually Transmitted Infection (N=464)

	STI History					
	Absent n = 288		Present n = 176		χ2 (df)	p <
	%	n	%	n		
Demographic variables						
Gender					2.46 (1)	ns
Female	51	147	59	103		
Male	49	141	42	73		
Ethnicity,					24.37 (4)	.0001
European-American	75	215	55	95		
African-American	15	42	33	58		
Other	10	30	12	21		
Marital status,					4.49 (1)	.04
Not married	85	244	92	161		
Married	15	44	8	15		
Education					0.6 (3)	ns
< High school graduate	33	94	34	59		
High school graduate	33	94	35	62		
Some college	25	72	23	40		
College graduate	9	27	9	15		
Employment status,					5.26 (1)	.03
Unemployed	77	222	86	151		
Employed	23	66	14	25		
	M	SD	M	SD	t (df)	p
Age	36.6	10.3	36.4	8.6	0.2 (462)	ns
Monthly income ($)	580	559	536	545	.81 (452)	ns
	%	n	%	n	χ2 (df)	p
Substance use variables						
AUDIT risk classification, %					.72 (1)	ns
low risk (≤7)	62	178	58	100		
high risk (>7)	38	110	42	73		
DAST risk classification, %					3.75 (1)	.055
low risk (≤2)	75	217	67	118		
high risk (>2)	25	71	33	58		
Psychiatric variables						
Diagnosis,					5.10 (4)	ns
Depression	46	131	46	81		
Bipolar	19	55	15	27		
Schizophrenia	17	49	14	24		
Schizoaffective	11	32	18	31		
Other	7	20	7	13		
	M	SD	M	SD	t (df)	p
Psychological distress (BSI)	61.7	40.5	68.1	40.8	−1.63 (458)	ns
Functional impairment (GAF)	47.8	13.2	46.7	12.9	0.89 (460)	ns

Note. BSI = AUDIT=Alcohol Use Disorders Identification Test; Brief Symptom Inventory; GAF=Global Assessment of Functioning; DAST=Drug Abuse Screening Test; STI = Sexually transmitted infection.

Table 2

Differences in HIV-Related Knowledge, Motivation, and Risk Behavior as Function of STI History

	STI History					
	Absent (n = 288)		Present (n = 176)		t (df)	p <
Risk-behavior antecedents	M	SD	M	SD		
HIV Knowledge	70.9	16.0	74.9	13.9	2.73 (462)	.01
Perceived Risk for HIV	3.7	3.2	4.9	3.7	2.73 (462)	.01
Behavioral Intentions	20.2	7.8	22.0	7.5	−3.83 (458)	.0001
Condom Attitudes	39.7	8.8	41.0	9.4	−2.55 (461)	.02
					−1.53 (460)	ns
Sexual risk behavior (last 3 months)						
Number of occasions, unprotected vaginal or anal sex	9.8	18.3	14.5	25.3	−2.10 (460)	.04
Proportion of sexual occasions during which a condom was used	22.6	39.07	29.06	41.9	−1.42 (326)	ns
	n	%	n	%	χ2 (df)	p <
Sex with multiple partners					5.97 (2)	.02
0 or 1 partners	230	80%	123	70%		
2 or more partners	58	20%	53	30%		