Published in final edited form as:

J Appl Biobehav Res. 2009 January ; 14(1): 30–54. doi:10.1111/j.1751-9861.2009.00039.x.

Associations of Sexual Victimization, Depression, and Sexual Assertiveness with Unprotected Sex: A Test of the Multifaceted Model of HIV Risk Across Gender

Patricia J. Morokoff¹,

Department of Psychology and/or the Cancer Prevention Research Center at the University of Rhode Island

Colleen A. Redding,

Department of Psychology and/or the Cancer Prevention Research Center at the University of Rhode Island

Lisa L. Harlow,

Department of Psychology and/or the Cancer Prevention Research Center at the University of Rhode Island

Sookhyun Cho,

Department of Psychology and/or the Cancer Prevention Research Center at the University of Rhode Island

Joseph S. Rossi,

Department of Psychology and/or the Cancer Prevention Research Center at the University of Rhode Island

Kathryn S. Meier,

Department of Psychology and/or the Cancer Prevention Research Center at the University of Rhode Island

Kenneth H. Mayer,

Brown University, the Miriam Hospital, and Fenway Community Health

Beryl Koblin, and

New York Blood Center Project Achieve Site

Pamela Brown-Peterside

New York Blood Center Project Achieve Site

Abstract

This study examined whether the Multifaceted Model of HIV Risk (MMOHR) would predict unprotected sex based on predictors including gender, childhood sexual abuse (CSA), sexual

victimization (SV), depression, and sexual assertiveness for condom use. A community-based sample of 473 heterosexually active men and women, aged 18–46 years completed survey measures of model variables. Gender predicted several variables significantly. A separate model for women demonstrated excellent fit, while the model for men demonstrated reasonable fit. Multiple sample model testing supported the use of MMOHR in both men and women, while simultaneously highlighting areas of gender difference. Prevention interventions should focus on sexual assertiveness, especially for CSA and SV survivors, as well as targeting depression, especially among men.

For sexually active men and women, the best way to prevent transmission of HIV and many other sexually transmitted infections (STIs) is the correct and consistent use of latex condoms (CDC, 2000). However, consistent use of condoms is practiced by only a minority of at-risk men and women. Recent studies of at-risk men and women indicate that less than 20% consistently use condoms (Shlay, McClung, Patnaik, & Douglas, 2004). An understanding of factors associated with unprotected sex in men and women will aid in developing targeted intervention programs to increase safer sex.

The Multifaceted Model of HIV Risk (MMOHR) was developed to predict sexual risk behavior in women (Harlow, Quina, Morokoff, Rose, & Grimley, 1993; Quina, Harlow, Morokoff, & Saxon, 1997). This paper evaluates the MMOHR, hypothesizing childhood sexual abuse (CSA) as a predictor of unprotected sex with mediator variables, including sexual assertiveness for condom use (CU), depression, and sexual victimization (SV), while examining whether the model can effectively be applied to men as well as women (see Figure 1).

The MMOHR, originally conceptualized as gender-specific to women, is premised on the concept that a woman's ability to protect herself sexually relates to the type of relational experiences she has had. The MMOHR thus predicts that childhood SV will contribute to a restriction in sexual assertiveness in sexual relationships, which will in turn predict lower frequency of CU. This model has been used to successfully predict sexual risk behaviors in women in a number of studies (Dolcini & Catania, 2000; Harlow et al., 1993, 1998; Johnsen & Harlow, 1996; Whitmire, Harlow, Quina, & Morokoff, 1999). The model proposes that sexual assertiveness will mediate between CSA and CU. Support for this hypothesis has been reported by Whitmire et al. (1999) and Rickert, Neal, Wiemann, and Berenson (2000), who found that low sexual assertiveness was associated with forced sexual activity, depression, and inconsistent birth control.

In addition to studies based specifically on the MMOHR, a number of other studies have provided support for the MMOHR by demonstrating links among variables it hypothesizes are related. For example, several studies have shown a link between CSA and HIV-positive status or history of STIs (El-Bassel, Witte, Wada, Gilbert, & Wallace, 2001; Kalichman, Gore-Felton, Benotsch, Cage, & Rompa, 2004; Kang, Deren, & Goldstein, 2002; Petrak, Byrne, & Baker, 2001; Wingood and DiClemente, 1997; Zierler et al., 1991).

Other researchers have explored the relationship between CSA, adult victimization, and sexual risk behavior in women. Research has demonstrated that adult SV serves as a

mediator between CSA and unprotected sex for women (Parillo, Freeman, Collier, & Young, 2001; Whitmire et al., 1999). Numerous studies have supported the link between CSA and adult sexual and/or physical victimization (e.g., Cohen et al., 2000; Fergusson, Horwood, & Lynskey, 1997; Gilbert, el-Bassel, Schilling, & Friedman, 1997; Wingood & DiClemente 1997). A review of this literature (Classen, Palesh, & Aggarwal, 2005) found over 30 studies suggesting that CSA is a risk factor for sexual revictimization. Additional studies have identified a strong relationship between adult victimization and unprotected sex in women (Hamburger et al., 2004). Some studies have reported a direct link between CSA and risky sexual behavior in women (Bensley, Van Eenwyk, & Simmons, 2000; Klein & Chao, 1995).

Numerous studies have identified depression as a sequelae of childhood abuse and interpersonal violence in women (Evans-Campbell, Linkhorst, Huang, & Walters, 2006; Messman-Moore, Long, & Siegfried, 2000). Tubman, Montgomery, Gil, & Wagner (2004) found that cumulative lifetime abuse was associated with increased risk for a broad range of psychiatric disorders, including a significant association with affective disorders. Lifetime prevalence of psychiatric disorder significantly associated with the number of sex partners in women and the proportion of protected intercourse in men. McGuigan and Middlemiss (2005) found that depression was highest in African-American women who had experienced both CSA and adult physical interpersonal violence compared to either form of victimization alone. Depression has also been found to be related to risk of partner violence. Among at-risk women are injection drug users; a history of CSA was associated with depression/PTSD, while depression/PTSD was associated with sexual risk behavior (Plotzker, Metzger, & Holmes, 2007). Additional studies have reported a relationship between depressed mood and sexual risk behavior among women (Alegria et al., 1994; Mazzaferro et al., 2006).

So far, this introduction has centered on results found for women, the target group for MMOHR predictions. The results of several recent studies, however, suggest that the MMOHR may also be valuable in understanding sexual risk behavior in men. For example, within a sample of men attending an STI clinic, CSA has been shown to be associated with greater sexual risk, including more sexual partners, unprotected sex, and sex trading (Senn, Carey, Vanable, Coury-Doniger, & Urban, 2006). In a study of African-American and Hispanic men, DiIorio, Hartwell, and Hansen (2002) found that men who reported CSA also reported more unprotected sexual acts and more partners as adults. Among men who have sex with men (MSM), CSA has been found to be related to HIV-risk behaviors (Kalichman et al., 2004; O'Leary, Purcell, Remien, & Gomez, 2003; Relf, Huang, Campbell, & Catania, 2004). Paul, Catania, Pollack, & Stall, 2001 reported this relationship among MSM, but also indicated the relationship between CSA and risky sexual behavior was not mediated by adult sexual revictimization or depression. Several studies support higher rates of depression among male victims of CSA (cf. Holmes, Foa, & Sammel, 2005; Leck, Difede, Patt, Giosan, & Szkodny, 2006). A similar pattern of vulnerability to HIV-risk behaviors for men and women survivors of CSA was found by Bensley et al. (2000) indicating a lack of significant difference by gender. Sexual assertiveness for CU, defined as assertiveness in initiating CU or refusing sex without CU, was studied by Noar, Morokoff, and Redding (2002), who found that men reporting higher sexual assertiveness for CU were more likely to be at a

higher stage of readiness to use condoms and less likely to engage in unprotected sex than men reporting low sexual assertiveness.

Whereas these studies suggest similar patterns between women and men, other studies suggest gender differences in predictors and correlates of risk behaviors. Although male victims of childhood physical or sexual abuse are at risk for adult victimization, at least one study found that only women were at risk for victimization by an intimate partner (Desai, Arias, Thompson, & Basile, 2002). Using the AIDS risk reduction model, Longshore, Stein, and Chin (2006) demonstrated gender differences in predictors of commitment to safer sex (i.e., knowledge was a predictor for men; self-efficacy for women).

Some studies suggest a possibly stronger relationship between depression and unprotected intercourse for men than women, especially in research on adolescents. For example, among adolescent boys but not girls, depression was independently related to condom non-use at last sex (Shrier, Harris, Sternberg, & Beardslee, 2001). Similarly, examining depressive symptoms as longitudinal predictors of sexual risk behaviors, Lehrer, Shrier, Gortmaker, and Buka (2006) found that for boys but not girls, high depressive symptoms were predictive of condom non-use at last sex. When a continuous measure of depression was used, girls also showed a relationship between depression and condom non-use at last sex.

The purpose of this study was to evaluate MMOHR-based predictors of unprotected sex in men and women, and to determine whether the model would be comparably predictive for heterosexual men and women. In doing so, we evaluate whether a model based on relationships that have been previously identified for women would also predict CU in at-risk samples of men and women. We were specifically interested in evaluating whether there are gender similarities in the extent to which SV, depression, and sexual assertiveness mediate the relationship between CSA and CU. The initial model we tested is shown in Figure 1.

Method

Participants

Participants were 473 men and women who were recruited as part of an 18-month longitudinal study from 10 different sites, 9 in Rhode Island, and 1 in New York. The sites included substance abuse treatment facilities and an STI clinic in Rhode Island, and the New York Blood Center Project ACHIEVE research site. The present study utilized only baseline data from the larger study to maintain a large sample size for model testing. A trained health educator approached men and women at recruitment sites and screened them to determine if they were eligible to participate in the study. Our intent was to recruit participants who were heterosexually active, without excluding participants who may also have engaged in same sex activity. Therefore, participants were eligible if they were 18–46 years of age, had vaginal or anal sex within the past 2 months, had at least one opposite-sex partner within the past 3 months, were not pregnant and did not plan to become pregnant within the next year, self reported as HIV-negative, and did not report having a sex partner who also was participating in this study. Both male and female participants also had to respond positively to at least one of the following sexual risks within the past year: had three or more sex

partners, had a sex partner who has had three or more sex partners, had a sex partner who was a bisexual male, had a sex partner who had injected drugs, had exchanged sex for money or drugs, or had been diagnosed with an STI. The mean age of participants was 31.6 years ($SD = 8.1$). Mean age did not differ between the 160 men and 313 women. Mean number of sex partners in the last month was 2.9 ($SD = 5.8$) and did not differ by gender. The mean number of sex partners in the last year, however, differed significantly by gender. Women ($M = 10.3$, $SD = 20.1$) reported significantly more sex partners in the last year than men ($M = 7.4$, $SD = 9.4$), $t(467) = -2.11$, $p < .05$ (two-tailed).

Measures

Demographics and risk-related variables—Participants were asked to report demographic information, including ethnicity, Hispanic/Latino status, age, last grade completed, marital status, current employment status, and income for the past year. In addition, participants indicated whether they had ever had an STI, ever used injection drugs, currently had a main partner, currently had another partner, and used a condom on their last sex occasion.

CSA—A modified six-item subscale adapted from Wyatt (1985) and used previously (Whitmire et al., 1999) asked individuals whether at age 14 or younger they ever had a sexual experience that involved an older person. Responses were based on a 4-point scale ranging from 1 (*no*) to 4 (*many times*). A sample item on this scale was “Did anyone older ever try to put his penis in your mouth, vagina or rectum?” CSA was calculated by summing responses to the six items. The Cronbach’s alpha for this scale was .92. Two items each measured subscales concerning the participant’s experience of exhibition (CSA Exhibition), the participant’s experience of being touched (CSA Touch), and the participant’s experience of penetration abuse (CSA Penetration).

SV—This scale was designed to measure lifetime experience of rape and SV by a partner. These six items were adapted from the Koss and Oros (1982) Sexual Victimization Scale. Responses were made on a 4-point scale ranging from 1 (*definitely no*) to 4 (*definitely yes*). Some sample questions on this scale were: “Have you ever in your life found out that a partner talked you into sex by saying things he or she didn’t mean?” and “Have you ever in your life had sex with a partner when you did not want to because you thought he or she would use force (twist your arm, hold you down, etc.)?” The Cronbach’s alpha for this scale was .87.

Depression—Depression was measured via a short form of the Center for Epidemiologic Studies Depression Symptoms Index (Kohout, Berkman, Evans, & Cornoni-Huntley, 1993). This 10-item scale asked participants to assess feelings within the past month using a 5-point response scale ranging from 1 (*never*) to 5 (*very often*). Sample items asked whether the participant “felt that they could not get going” and “felt lonely.” The Cronbach’s alpha for this scale was .87.

Sexual assertiveness for CU (Sexual Assertiveness CU)—This construct is conceptualized as the ability to initiate use of condoms or refuse sex in which condoms will

not be used (Morokoff et al., 1997). The scale consisted of six items, such as “I make sure my partner and I use condoms.” Participants responded on a 5-point scale ranging from 1 (*never*) to 5 (*always*). The Cronbach’s alpha for the Sexual Assertiveness CU scale was .78.

Unprotected sex—Unprotected sex was conceptualized as a latent variable with three relevant indicators: CU frequency, stage of change for CU, and ratio of protected sex. Previous research (Burkholder & Harlow, 1996) demonstrated that using a latent variable with multiple measures is preferable to using a single or composite variable, as it provides a fuller and more accurate representation of sexual risk. For each indicator, participants were asked to report on behavior in the past month (or 2 months if the participant had not had sex in the past month). CU frequency was rated on a 5-point rating scale, with response alternatives ranging from 1 (*never*) to 5 (*every time*). This rating scale has been demonstrated to produce meaningful groups of respondents in an at-risk sample (White et al., 2000). The stage of change for CU was calculated by assigning a numeric value to each of the stages of change (*precontemplation* = 1, *contemplation* = 2, *preparation* = 3, *action* = 4, and *maintenance* = 5). The stages were determined using an algorithm based on current consistent or inconsistent use of condoms and intention to begin using condoms consistently (Brown-Peterside, Redding, Ren, & Koblin, 2000). Consistent with prior research, precontemplation included those who were not using condoms consistently and were not intending to start within the next 6 months. Contemplation included those who reported not using condoms consistently and intent to start within the next 6 months or the next 30 days. Preparation included those who reported almost always using condoms and intent to begin using them consistently within the next 30 days. Action included those who reported using condoms consistently for at least the past 30 days and for less than 6 months. Maintenance included those who reported using condoms consistently for 6 months or more. In order to accurately assess CU, a ratio of protected sex was created by dividing participants’ reports of the number of sex occasions in which they had used condoms by the total number of times they had sex. All three indicators were conceptualized as negatively related to the latent variable Unprotected Sex. The Cronbach’s alpha for the three measures of Unprotected Sex (CU, Stage of change for CU, and ratio of protected sex) was .92.

Procedure

Participants were recruited by trained health educators who approached men and women in the recruitment sites. Potential participants were screened to determine eligibility for participation. Once eligibility was established, a signed informed consent was obtained. Participants had the option of completing their baseline session at the time of screening or scheduling an appointment for a later date. Participants were asked to complete a paper-and-pencil survey packet, which required approximately 30 minutes. In addition, questions on CU were administered via computer so that we could use skip patterns and automatically check the data for consistency. Participants received incentives in the form of gift certificates to be used for food or merchandise, condoms, and tokens for public transportation equal in value to \$18 for baseline participation. Referrals to resource agencies around the state were provided to all participants in the event that their participation raised any concerns.

Results

Descriptive statistics on demographic and risk-related variables for men and women are presented in Table 1. These data reflect an ethnically diverse sample fairly evenly divided among Blacks, Whites, and Hispanics/Latinos. The typical participant was unemployed, unmarried, had an income of less than \$10,000 per year, and had a high school diploma or less. Only 27% used a condom the last time they had sex; less than 10% reported consistently using condoms; 45% reported having had an STI (13% in the past year); 36% reported they had been raped in their lifetime; 28% reported they had been raped as a child (through the age of 14 years); 19% reported having used injection drugs; and 42% indicated that they had exchanged sex for money or drugs. These data demonstrate that the sample is at high risk for HIV and other STIs. Table 2 presents means and standard deviations for predictor, mediator, and outcome study variables and effect sizes for variables that differed by gender.

Categorical and Mean Comparisons of Men and Women

Chi-square analyses were conducted on categorical variables in Table 1 to determine whether there were differences between men and women. These results indicated that there were no differences between men and women in ethnicity, Hispanic/Latino status, marital status, injection drug use, categorical stages of change for CU, the overall percent of those reporting CSA, and CSA Exhibition. Gender differences in several variables were found. A significant chi-square was found for education. Gender differences in education were not linear, with women being over-represented among those who had a ninth-grade education or less (8% of men vs. 15% of women), but also the category representing 2 years of college (12% of men vs. 20% of women). Men were over-represented among those with some high school or a high school diploma (75% for men vs. 58% for women). Comparison of main partner status indicated that women were more likely to report having a main partner, with 80% of women reporting a main partner compared to 70% for men. A significant chi-square was found for income, indicating that women were proportionally underrepresented in the higher income categories compared to men. A significant difference was also found for job status, indicating that women were more likely to report “not working now” (55% of men vs. 71% of women) and less likely to report having a full-time job (27% of men vs. 15% of women). A gender difference was also found as to whether the participant had ever had an STI, which was reported by 53% of women compared to 31% of men. A significant chi-square was found for whether the participant had used a condom at last sex, with 32.5% of men reporting CU compared to only 24.0% of women. Significant gender differences were also found for exchanging sex for money or drugs, which was reported by 24% of men and 50% of women in this sample. A higher percent of women than men reported CSA Touch (50% vs. 36%) and CSA Penetration (33% vs. 19%). Similarly, a higher percentage of women than men reported having experienced rape (46% vs. 10%).

In order to determine whether there were gender differences in the MMOHR variables in Table 2, a multivariate analysis of variance was conducted. In this analysis, gender served as the independent variable, while the 10 model variables were dependent variables. Results indicated that there was an overall effect for gender, Wilk's $\Lambda = .866$, $F(9, 402) = 6.894$, p

< .001, accounting for 13.4% of the variance in the set of dependent measures (listed in Table 2). Univariate analyses indicated significant small-to-medium-sized differences listed in Table 2 for CSA Total, CSA Touch, CSA Penetration, SV, and Depression, all of which were greater in women than men.

Structural Equation Modeling (SEM)

A number of SEM analyses were conducted using maximum likelihood estimation with the EQS program (Bentler, 2004). SEM analyses allowed hypothesized models to be tested on samples of men and women, separately and combined. Fit indices were evaluated for each analysis, including the overall fit between the model and data, as assessed by a low chi-square (χ^2) relative to the degrees of freedom (*df*), a comparative fit index (*CFI*; Bentler, 1990) close to 1.0, and a root mean square error of approximation (*RMSEA*) close to zero. As the chi-square statistic is sensitive to non-normality and sample size, model fit is assessed with several indices to provide several ways to evaluate the appropriateness of a model. In addition, specific aspects of a model are evaluated by examining the significance of hypothesized parameters and the effect sizes (i.e., R^2 values) for mediator and outcome variables (Kline, 2005). Prior to conducting SEM analyses, zero-order correlations among study variables were examined for the total sample (see Table 3). This matrix indicated strong relationships among the proposed indicators of the latent dependent variable (Unprotected Sex), moderate correlations between Sexual Assertiveness CU and the dependent variables, and small to moderate intercorrelations among CSA and mediator variables.

In order to determine whether there were gender differences in MMOHR predictors of CU, we first tested the model shown in Figure 1, including gender as a predictor, on the total sample. The overall fit of the model to the data was reasonable, with χ^2 (10, $n = 473$) = 26.588, $p = .003$; *CFI* = .988; and *RMSEA* = .059. In this model, 22% of the variance in unprotected sex was accounted for by model predictors, representing a medium to large multivariate effect size. Standardized parameter estimates for path coefficients among the factors for this model are presented in Figure 2. These indicated that CSA was a positive, significant predictor of both SV and Depression, but not Sexual Assertiveness CU. Whereas the three mediators (i.e., SV, Depression, and Sexual Assertiveness CU) were significantly related, only the mediator of Sexual Assertiveness CU was significantly negatively associated with the outcome, Unprotected Sex. The pattern of relationships among the mediators and the outcome indicated that higher Sexual Assertiveness CU was directly linked with less depression, less SV, and less unprotected sex. Depression and SV were only indirectly linked with greater unprotected sex through negative relationships with sexual assertiveness for CU. Further, gender significantly predicted CSA, SV, Depression, and Unprotected Sex, indicating that women reported more CSA, adult SV, depression, and unprotected sex.

Based on finding several different predictions related to gender in the initial SEM analyses, we then examined separate models for men and women. The overall fit of the model for women was excellent with χ^2 (8, $n = 313$) = 10.675, $p = .555$, *CFI* = .997; and *RMSEA* = .033. In this model, 18% of variance in unprotected sex was accounted for by model

predictors, indicating a medium multivariate effect size. Standardized parameter estimates for path coefficients among the factors for this model are presented in Figure 3. These include many of the same relationships as in the total sample model (see Figure 2), indicating that CSA was a significant predictor of both SV and Depression. Unlike findings from the total sample, however, among women, CSA was a significant negative predictor of Sexual Assertiveness CU, indicating that greater CSA was related to less sexual assertiveness for CU. SV was again significantly related to Depression and Sexual Assertiveness CU. However, here Depression was not significantly related to Sexual Assertiveness CU, and again, neither SV nor Depression directly predicted Unprotected Sex. As for the total sample, Sexual Assertiveness CU inversely predicted Unprotected Sex, indicating that the higher the level of sexual assertiveness, the less unprotected sex. Across the whole model depicted in Figure 3, findings indicate that CSA was significantly related to all three mediators, with only Sexual Assertiveness CU showing a direct mediational relationship to the outcome (i.e., Unprotected Sex). SV and Depression demonstrated an indirect mediational relationship to the outcome with SV significantly relating to Sexual Assertiveness CU and Depression significantly relating to SV.

The overall fit of the model for men was not excellent but was still reasonable, with $\chi^2 (8, n = 160) = 20.827, p = .008, CFI = .976$; and $RMSEA = .100$. However, the amount of prediction for the dependent variable was stronger for men than for the total sample and the subsample of women, with a large effect size of 35% of variance in unprotected sex accounted for by model predictors. Standardized parameter estimates for path coefficients for this model are presented in Figure 4. Relationships of factors among men are more different compared to the total sample than for women, perhaps reflecting women's greater representation in the total sample. For men, CSA was a significant predictor of only SV and not Depression or Sexual Assertiveness CU as had been the case for women. As it was for women and the total sample, there was a significant relationship between SV and Depression for the men. As in the female sample model (and in contrast to the total sample model), SV, but not Depression, significantly related to Sexual Assertiveness CU. As for women, Sexual Assertiveness CU inversely predicted Unprotected Sex, indicating that the higher the level of sexual assertiveness, the less unprotected sex. Unlike either the female or total sample models, for men, Depression significantly predicted Unprotected Sex, indicating that the higher the reported depression among men, the more they engaged in unprotected sex. Examining the overall model for men, there was some evidence for a mediational relationship between CSA and the outcome of Unprotected Sex through the mediator of SV, which in turn was associated with both other mediators, Sexual Assertiveness CU and Depression that were each directly related to the outcome.

In order to further compare the male and female sample models, a multiple sample analysis was conducted on the model depicted in Figures 3 and 4. Multiple sample invariance analysis is a technique for evaluating whether model parameters (e.g., factor loadings, variances, covariances) are similar across samples (Kline, 2005). In this analysis, we determined the extent to which the same model could be applied to both male and female samples. This analysis included six steps that imposed increasing constraints of similarity until step 6 that presents a final model retaining only the significant constraints. By

conducting a series of multiple sample tests, we can determine which parameters were statistically similar across men and women, and which needed to remain different. Thus, results from a multiple sample analysis provided more precise indication of the applicability of the MMOHR model to both men and women. Based on the literature, we did not expect that the model would fit exactly the same, although we did expect some level of comparability, and the analysis should reveal whether and where this is the case. Model fit indices for each step are provided in Table 4. The first step was to test a congeneric model, in which the model structure is the same but no constraints were imposed, so that the loadings were allowed to be different for the two gender samples. As indicated in Table 4, model fit was reasonably good. This indicates that a model with the same constructs (e.g., an independent variable of CSA, three mediators of sexual assertiveness for CU, SV, and depression, and a latent factor of unprotected sex) provided a reasonable approximation of the data for both men and women. The second step evaluated whether in addition to the congeneric requirements, a tau-equivalent measurement model (one in which there are equal factor loadings for the latent variable Unprotected Sex) fit the data for the two gender samples. Again, the fit was reasonably good. Findings from this second step extend the level of comparability beyond the basic structure of the constructs to include the same measurement structure (i.e., factor loadings) for the latent outcome variable, showing that the three indicators loaded comparably for men and women on the latent variable Unprotected Sex. The third step involved adding to the previous requirements equal variance for the latent variable Unprotected Sex across the two gender samples. The resulting model again demonstrated a reasonable fit to the data, extending the degree of model comparability across genders to include the variance of Unprotected Sex, in addition to the factor loadings for Unprotected Sex. The fourth step added to the previous constraints the requirement that the covariances (among the variables Sexual Assertiveness CU, SV, and Depression) be equal across the two samples, again resulting in acceptable model fit and extending model comparability across genders to covariances, as well as variance and factor loadings. Thus, each set of additional constraints imposed on the models from steps one through four resulted in non-significant chi-square difference tests, suggesting that a model with several constraints (i.e., factor loadings, variance, and covariance) provided a reasonable fit to the data for both men and women. The fifth step evaluated whether a parallel model, in which all model path parameters were constrained to be equal across groups, fit the data. Whereas this model also demonstrated a reasonable fit across samples of men and women, it did result in a significantly worse fit to the data than model four, $\chi^2(7) = 20.892, p < .01$. Thus, it was important to test a final model in step 6 that retained only constraints that were statistically acceptable across both genders.

At the sixth step, the model 5 results were examined to determine which of the parameters needed to be freed for the model to show better fit across the two samples. Then, a post hoc multiple sample partial invariance analysis was performed, incorporating the recommended parameters that needed to be freed, and retaining the constrained parameters for those that indicated reasonable fit across the gender samples. The freed paths that needed to be different were those between CSA and SV, CSA and Depression, and Sexual Assertiveness CU and Unprotected Sex, reflecting the fact that the relationship between CSA and both Depression and SV was stronger for women than men, while the relationship between

Sexual Assertiveness CU and Unprotected Sex was stronger for men than women. Model 6 demonstrated an improved fit compared to model 5, $\chi^2(3) = 14.784, p < .01$. Next, comparing model 6 to model 4, the chi-square difference test revealed no significant loss in model fit, $\chi^2(4) = 6.108, p > .05$, indicating that model 6 fit the data as well as model 4 did.

Overall, the multiple sample analyses revealed that the model depicted in Figures 3 and 4 was comparable for men and women in terms of the set of constructs (step 1), the factor loadings for the latent factor (step 2), the variance of the latent factor (step 3), and the covariances among the mediators (step 4). In step 5, three of the regression paths between constructs did not appear to be statistically invariant across genders, and were thus released in a final, revised model in step 6. The final multiple sample analysis demonstrated a reasonable fit to the data for both men and women, revealing a high degree of comparability across genders for the MMOHR model tested.

Discussion

This study affirms that a model based on the MMOHR predicts unprotected sex in both at-risk men and women. Further, this is the first study examining this model in men. In this model, sexual assertiveness, SV, and depression were tested as mediators between CSA and unprotected sex. In models tested separately for men and women, CSA was found for both genders to predict later SV. SV was, for both men and women, related to sexual assertiveness for CU, indicating that the more reported victimization, the less assertiveness for CU. In both genders, sexual assertiveness for CU predicted unprotected sex. Multiple sample analysis revealed that the structure of this model was reasonably good for both women and men, and that the latent dependent variable, Unprotected Sex, had reasonably equivalent loadings and variances for both men and women. Furthermore, covariances for mediator variables were comparable. However, in the multiple sample analysis, three of the paths in the model demonstrated sufficiently different regression coefficients that it was necessary to allow them to differ between gender models in order to fit the data well. The released paths included the path from CSA to Depression and the path from CSA to SV, both of which were stronger for women than men, and the path from Sexual Assertiveness CU to Unprotected Sex, which was stronger in men than women. Overall, this indicates that the MMOHR can be used to understand predictors of CU by men as well as women, and that there is significant commonality in these predictors as well as some differences.

A variable differentiating model results for men and women was depression, as indicated by the multiple sample analysis. For women, those who experienced CSA were more depressed, accounting for 10% of the variance in reported depression. In contrast, depression was not significantly predicted by CSA in our male sample (where it accounted for less than 1% of variance). The strong relationship of CSA to depression in women is supported by previous research (Evans-Campbell et al., 2006; Messman-Moore et al., 2000; Tubman et al., 2004). In this study, women reported significantly higher levels of depression than men, so our ability to show relationships between depression and other variables among men may have been limited by this restricted range. These findings contradict those reported by Holmes et al. (2005), who found that CSA was significantly related to post-traumatic stress disorder/depression in a random digit dial sample of men. This may be accounted for by the

nature of the samples included in different studies. In our study, depression played a central role for women, contributing along with CSA and Sexual Assertiveness in explaining 18% of the variance in later SV, compared to only 7% for men.

In the separate male and female models, depression emerged as a significant predictor of Unprotected Sex for men but not women. The finding of a significant relationship between depressed mood and less CU in men, but not women, is consistent with findings reported by Shrier et al. (2001) and Lehrer et al. (2006), who found depression in adolescent boys but not girls to predict unprotected sex. Since condoms are a male-controlled method, it makes sense that male characteristics more directly predict CU compared to female characteristics. Further research is needed to clarify the role of depression and healthy sexual behavior among both women and men.

Men and women differed in the extent to which the touch and penetration components of CSA, as well as SV and depression, were endorsed. Women reported a greater level of CSA, SV, and depression than men, as would be expected from previous research as would be expected from previous research (Nolen-Hocksema & Hilt, 2009; Sedlak & Broadhurst, 1996). In this study, 33% of women and 19% of men reported experiencing penetration CSA (rape) prior to age 15. Thus, while reported more frequently by women, a substantial proportion of men reported experiencing childhood rape.

Our study indicated that both women and men who reported experiencing CSA were more likely to report later SV, although this relationship was stronger in women. These results support previous findings of a link between CSA and adult sexual and/or physical victimization for women (e.g., Classen et al., 2005; Cohen et al., 2000; Fergusson et al., 1997; Gilbert et al., 1997; Wingood & DiClemente, 1997). Furthermore, these results support Desai et al.'s (2002) finding that childhood victimization increased the risk for adulthood victimization for men as well as women. Desai et al.'s study is one of the few in the literature to examine gender differences in revictimization, and found that female but not male CSA survivors were at risk for revictimization by an intimate partner. This susceptibility could explain the increased risk for women compared to men in our data.

Just as for women, men who reported later SV reported less sexual assertiveness for CU. Although we cannot infer a causal link from these cross-sectional data, the results support previous findings that CSA places men and women at higher risk for further SV as adults. One of the sequelae of SV could be an impaired ability or willingness to assert oneself in order to protect oneself sexually. This lack of perceived assertiveness correlated strongly with our latent variable of unprotected sex. These relationships need further exploration in a longitudinal model.

The role of sexual assertiveness for men has been underestimated in previous literature, potentially because gender role stereotypes assume that men are highly assertive in sexual situations. The present findings indicate no significant difference in sexual assertiveness for CU between women and men. It may seem inconsistent that women report a higher frequency of rape than men (46% compared to 10% of men) and yet do not report less sexual assertiveness than men. This is not inconsistent, however, when one realizes that

women may assertively refuse unwanted sex but still be coerced or physically forced to engage in unwanted sex. However, sexual assertiveness for CU was a stronger predictor of unprotected sex for men than women, as demonstrated by the multiple sample results. Comparable to our finding of depression as a predictor of unprotected sex, since condoms are male controlled, it makes sense that perceptions of assertiveness were stronger predictors of actual CU for men than for women.

This study has some limitations. Eligibility criteria in our study were specifically constructed to recruit a sample at risk for HIV and other STIs. Such risk characteristics are often associated with low income (Krueger, Wood, Diehr, & Maxwell, 1990), and our sample was not representative of the larger population with respect to income. The question of generalization to other income groups is complicated by the fact that sexual risk, drug use, and low income are often intertwined.

Our sample of at-risk women was larger than the sample of at-risk men. These samples may be differentially representative of at-risk men and women more generally. The women and men in this sample were slightly different in some potentially important ways (males reported more full-time work; women reported more income, more sex partners, more exchanging sex for money or drugs, and more STI history). Although the model showed an excellent fit for women's data, the amount of predicted variance in the outcome variable (18%) was lower than for men (35%), potentially due to the fact that CU, the basis for the latent variable unprotected sex, is male controlled and therefore more difficult to predict in women. In spite of these limitations, most study findings are consistent with the broader literature. These data are cross sectional and are suggestive of causal relationships that will be tested and explored in future longitudinal studies. If these results do replicate longitudinally, such results suggest that children identified as having experienced sexual abuse should be considered at increased risk for further victimization. Interventions addressing this risk would then need to be tested. Given the high rate of childhood and adult SV in both men and women, there is some urgency for this research. Again, if supported by longitudinal research, the relationships among adult SV, sexual assertiveness for CU, and unprotected sex would strongly suggest the need for intervention programs for both men and women rape victims, perhaps targeting assertiveness.

Prevention interventions for both men and women could include sexual assertiveness training, especially for survivors of CSA and/or adult SV. Despite gender commonalities, these findings suggest possible avenues for gender tailoring. For example, interventions for men may benefit from including more screening to allow appropriate treatment or referral for depression. Future studies should explore optimal ways to target depression and sexual assertiveness in sexual health promotion interventions.

In conclusion, the present study demonstrates that the MMOHR, a model originally developed to explain HIV risk behavior in women, demonstrated support in both men and women. Specifically, a model predicting that SV and sexual assertiveness mediated the relationship between CSA and unprotected sex was supported in both men and women. Depression was found to have significant links to both CSA and SV in women, whereas depression was associated with more unprotected sex in men. We conclude that there are

strong commonalities for heterosexual men and women in predictors of unprotected sex, as well as noteworthy areas for gender tailoring in future interventions.

Acknowledgments

This paper was supported by grant #AI/MH 41323 from the National Institute of Allergy and Infectious Disease to Patricia J. Morokoff. Authors gratefully acknowledge all health educators and project participants for their time and efforts on behalf of this project.

References

- Alegria M, Vera M, Freeman DH, Robles R, Santos MdelC, Rivera CL. HIV infection, risk behavior, and depressive symptoms among Puerto Rican sex workers. *American Journal of Public Health*. 1994; 84:2000–2002. [PubMed: 7998647]
- Bensley LS, Van Eenwyk J, Simmons KW. Self-reported childhood sexual and physical abuse and adult HIV-risk behaviors and heavy drinking. *American Journal of Preventive Medicine*. 2000; 18:151–158. [PubMed: 10698246]
- Bentler, PM. EQS (Version 6.1). Encino, CA: Multivariate Software Inc.; 2004.
- Bentler PM. Comparative fit indexes in structural models. *Psychological Bulletin*. 1990; 107:238–246. [PubMed: 2320703]
- Brown-Peterside P, Redding CA, Ren L, Koblin BA. Accept-ability of a stage-matched expert system intervention to increase condom use among women at high risk of HIV infection in New York City. *AIDS Education and Prevention*. 2000; 12:171–181. [PubMed: 10833041]
- Burkholder GJ, Harlow LL. Using structural equation modeling techniques to evaluate HIV risk models. *Structural Equations Modeling*. 1996; 3:348–368.
- CDC. Sponsored by the National Institute of Allergy and Infectious Diseases. Alexandria, VA: 2000. Scientific evidence on condom effectiveness and STD prevention. from www3.niaid.nih.gov/about/organization/dmid/PDF/condomReport.pdf [Retrieved March 19, 2009]
- Classen CC, Palesh OG, Aggarwal R. Sexual revictimization: A review of the empirical literature. *Trauma Violence Abuse*. 2005; 6:103–129. [PubMed: 15753196]
- Cohen M, Deamant C, Barkan S, Richardson J, Young M, Holman S, et al. Domestic violence and childhood sexual abuse in HIV-infected women and women at risk for HIV. *American Journal of Public Health*. 2000; 90:560–565. [PubMed: 10754970]
- Desai S, Arias I, Thompson MP, Basile KC. Childhood victimization and subsequent adult revictimization assessed in a nationally representative sample of women and men. *Violence and Victims*. 2002; 17:639–653. [PubMed: 12680680]
- DiIorio C, Hartwell T, Hansen N. NIMH Multisite HIV Prevention Trial Group. Childhood sexual abuse and risk behaviors among men at high risk for HIV infection. *American Journal of Public Health*. 2002; 92:214–219. [PubMed: 11818294]
- Dolcini MM, Catania JA. Psychosocial profiles of women with risky sexual partners: The national AIDS behavioral surveys (NABS). *AIDS and Behavior*. 2000; 4:297–308.
- El-Bassel N, Witte SS, Wada T, Gilbert L, Wallace J. Correlates of partner violence among female street-based sex workers: Substance abuse, history of childhood abuse, and HIV risks. *AIDS Patient Care and STIs*. 2001; 15:41–51.
- Evans-Campbell T, Linkhorst T, Huang B, Walters KL. Interpersonal violence in the lives of urban Indian and Alaska Native women: Implications for health, mental health, and help seeking. *American Journal of Public Health*. 2006; 96:1416–1422. [PubMed: 16809604]
- Fergusson DM, Horwood LJ, Lynskey MT. Childhood sexual abuse, adolescent sexual behaviors and sexual revictimization. *Child Abuse and Neglect*. 1997; 21:789–803. [PubMed: 9280383]
- Gilbert L, el-Bassel N, Schilling RF, Friedman E. Childhood abuse as a risk for partner abuse among women in methadone maintenance. *American Journal of Drug and Alcohol Abuse*. 1997; 23:581–595. [PubMed: 9366975]

- Hamburger ME, Moore J, Koenig LJ, Vlahov D, Schoenbaum EE, Schuman P, et al. Persistence of inconsistent condom use: Relation to abuse history and HIV serostatus. *AIDS and Behavior*. 2004; 8:333–344. [PubMed: 15475680]
- Harlow LL, Quina K, Morokoff PJ, Rose JS, Grimley DM. HIV risk in women: A multifaceted model. *Journal of Applied Biobehavioral Research*. 1993; 1:3–38.
- Harlow LL, Rose JS, Morokoff PJ, Quina K, Mayer K, Mitchell K, et al. Women HIV sexual risk takers: Related behaviors, interpersonal issues, and attitudes. *Women's Health*. 1998; 4:407–439. [PubMed: 9916547]
- Holmes WC, Foa EB, Sammel MD. Men's pathways to risky sexual behavior: Role of co-occurring sexual abuse, posttraumatic stress disorder, and depression histories. *Journal of Urban Health*. 2005; 82(1, Suppl 1):i89–i99. [PubMed: 15738316]
- Johnsen LW, Harlow LL. Childhood sexual abuse linked with adult substance use, victimization, and AIDS-risk. *AIDS Education and Prevention*. 1996; 8:44–57. [PubMed: 8703640]
- Kalichman SC, Gore-Felton C, Benotsch E, Cage M, Rompa D. Trauma symptoms, sexual behaviors, and substance abuse: Correlates of childhood sexual abuse and HIV risks among men who have sex with men. *Journal of Child Sexual Abuse*. 2004; 13:1–15. [PubMed: 15353374]
- Kang SY, Deren S, Goldstein MF. Relationships between childhood abuse and neglect experience and HIV risk behaviors among methadone treatment drop-outs. *Child Abuse and Neglect*. 2002; 26:1275–1289. [PubMed: 12464301]
- Klein H, Chao BS. Sexual abuse during childhood and adolescence as predictors of HIV-related sexual risk during adulthood among female sexual partners of injection drug users. *Violence Against Women*. 1995; 1:55–76. [PubMed: 12346572]
- Kline, RB. *Principles and practice of structural equation modeling*. 2nd ed.. New York: Guilford Press; 2005.
- Kohout FJ, Berkman LF, Evans DA, Cornoni-Huntley J. Two shorter forms of the CES-D depression symptoms index. *Journal of Aging and Health*. 1993; 5:179–193. [PubMed: 10125443]
- Koss MP, Oros CJ. Sexual experience survey: A research instrument investigating sexual aggression and victimization. *Journal of Consulting and Clinical Psychology*. 1982; 50:455–457. [PubMed: 7096751]
- Krueger LE, Wood RW, Diehr PH, Maxwell CL. Poverty and HIV seropositivity: The poor are more likely to be infected. *AIDS*. 1990; 4:811–814. [PubMed: 2261136]
- Leck P, Difede J, Patt I, Giosan C, Szkodny L. Incidence of male childhood sexual abuse and psychological sequelae in disaster workers exposed to a terrorist attack. *International Journal of Emergency Mental Health*. 2006; 8:267–274. [PubMed: 17131772]
- Lehrer JA, Shrier LA, Gortmaker S, Buka S. Depressive symptoms as a longitudinal predictor of sexual risk behaviors among US middle and high school students. *Pediatrics*. 2006; 118:189–200. [PubMed: 16818565]
- Longshore D, Stein JA, Chin D. Pathways to sexual risk reduction: Gender differences and strategies for intervention. *AIDS Behavior*. 2006; 10:93–104. [PubMed: 16385391]
- McGuigan WM, Middlemiss W. Sexual abuse in childhood and interpersonal violence in adulthood: A cumulative impact on depressive symptoms in women. *Journal of Interpersonal Violence*. 2005; 20:1271–1281. [PubMed: 16162489]
- Mazzaferro KE, Murray PJ, Ness RB, Bass DC, Tyus N, Cook RL. Depression, stress, and social support as predictors of high-risk sexual behaviors and STIs in young women. *Journal of Adolescent Health*. 2006; 39:601–603. [PubMed: 16982400]
- Messman-Moore TL, Long PJ, Siegfried NJ. The revictimization of child sexual abuse survivors: An examination of the adjustment of college women with child sexual abuse, adult sexual assault, and adult physical abuse. *Child Maltreatment*. 2000; 5:18–27. [PubMed: 11232059]
- Morokoff PJ, Quina K, Harlow LL, Whitmire L, Grimley DM, Gibson PR, et al. Sexual assertiveness scale (SAS) for women: Development and validation. *Journal of Personality and Social Psychology*. 1997; 73:790–804. [PubMed: 9325594]
- Noar SM, Morokoff PJ, Redding CA. Sexual assertiveness in heterosexually active men: A test of three samples. *AIDS Education and Prevention*. 2002; 14:330–342. [PubMed: 12212719]

- Nolen-Hoeksema, S.; Hilt, LM. Gender differences in depression. In: Gotlib, IH.; Hammen, CL., editors. *Handbook of Depression*. 2nd ed.. NY: The Guilford Press; 2009. p. 386-404.
- O'Leary A, Purcell D, Remien RH, Gomez C. Childhood sexual abuse and sexual transmission risk behaviour among HIV-positive men who have sex with men. *AIDS Care*. 2003; 15:17–26. [PubMed: 12655830]
- Parillo KM, Freeman RC, Collier K, Young P. Association between early sexual abuse and adult HIV-risky sexual behaviors among community-recruited women. *Child Abuse and Neglect*. 2001; 25:335–346. [PubMed: 11414393]
- Paul JP, Catania J, Pollack L, Stall R. Understanding childhood sexual abuse as a predictor of sexual risk-taking among men who have sex with men: The Urban Men's Health Study. *Child Abuse and Neglect*. 2001; 25:557–584. [PubMed: 11370726]
- Petrak J, Byrne A, Baker M. The association between abuse in childhood and STI/HIV risk behaviours in female genitourinary (GU) clinic attendees. *Sexually Transmitted Infections*. 2001; 76:457–461. [PubMed: 11221129]
- Plotzker RE, Metzger DS, Holmes WC. Childhood sexual and physical abuse histories, PTSD, depression, and HIV risk outcomes in women injection drug users: A potential mediating pathway. *American Journal of Addiction*. 2007; 16:431–438.
- Quina, K.; Harlow, LL.; Morokoff, PJ.; Saxon, SE. Interpersonal power and women's HIV risk. In: Goldstein, N.; Manlowe, JL., editors. *The gender politics of HIV/AIDS in women*. New York: New York University Press; 1997. p. 188-206.
- Relf MG, Huang B, Campbell J, Catania J. Gay identity, interpersonal violence, and HIV risk behaviors: An empirical test of theoretical relationships among a probability-based sample of urban men who have sex with men. *The Journal of the Association of Nurses in AIDS Care*. 2004; 15:14–26. [PubMed: 15090130]
- Rickert VI, Neal WP, Wiemann CM, Berenson AB. Prevalence and predictors of low sexual assertiveness. *Journal of Pediatric and Adolescent Gynecology*. 2000; 13:88–89. [PubMed: 10869973]
- Sedlak, AJ.; Broadhurst, DD. Executive summary of the third national incidence study of child abuse and neglect. Washington, DC: U.S. Department of Health and Human Services National Center on Child Abuse and Neglect; 1996. from www.childwelfare.gov/pubs/statsinfo/nis3.cfm#national [Retrieved March 19, 2009]
- Senn TE, Carey MP, Vanable PA, Coury-Doniger P, Urban MA. Childhood sexual abuse and sexual risk behavior among men and women attending a sexually transmitted disease clinic. *Journal of Consulting and Clinical Psychology*. 2006; 74:720–731. [PubMed: 16881780]
- Shlay JC, McClung MW, Patnaik JL, Douglas JM. Comparison of sexually transmitted disease prevalence by reported level of condom use among patients attending an urban sexually transmitted disease clinic. *Sexually Transmitted Diseases*. 2004; 31:154–160. [PubMed: 15076927]
- Shrier LA, Harris SK, Sternberg M, Beardslee WR. Associations of depression, self-esteem, and substance use with sexual risk among adolescents. *Preventive Medicine*. 2001; 33:179–189. [PubMed: 11522159]
- Tubman JG, Montgomery MJ, Gil AG, Wagner EG. Abuse experiences in a community sample of young adults: Relations with psychiatric disorders, sexual risk behaviors, and sexually transmitted diseases. *American Journal of Community Psychology*. 2004; 34:147–162. [PubMed: 15495800]
- White, SL.; Redding, CA.; Morokoff, PJ.; Meier, KS.; Rossi, JS.; Gazabon, SA., et al. Utility of a 5-point Likert condom frequency scale in at-risk sexually active adults. Poster presented at the Society of Behavioral Medicine; Nashville, TN. 2000.
- Whitmire, LE.; Harlow, LL.; Quina, K.; Morokoff, PJ. Childhood trauma and HIV: Women at risk. Philadelphia, PA: Brunner/Mazel; 1999.
- Wingood GM, DiClemente RJ. Child sexual abuse, HIV sexual risk, and gender relations of African-American women. *American Journal of Preventive Medicine*. 1997; 13:380–384. [PubMed: 9315271]
- Wyatt GE. The sexual abuse of Afro-American and white-American women in childhood. *Child Abuse and Neglect*. 1985; 9:507–519. [PubMed: 4084830]

Zierler S, Feingold L, Laufer D, Velentgas P, Kantrowitz-Gordon I, Mayer K. Adult survivors of childhood sexual abuse and subsequent risk of HIV infection. *American Journal of Public Health*. 1991; 81:572–575. [PubMed: 2014856]

Figure 1.
Hypothesized structural model of relationships among CSA, Sexual Assertiveness CU, SV, Depression, and Unprotected Sex.

Figure 2.

Standardized parameter estimates for path coefficients among the factors for total sample model, $\chi^2(10, n = 473) = 26.588, p = .003, CFI = .988, RMSEA = .059$.

Figure 3.

Standardized parameter estimates for path coefficients among the factors in the model for Women, $\chi^2(8, n = 313) = 10.675, p = .555, CFI = .997, RMSEA = .033$.

Figure 4.

Standardized parameter estimates for path coefficients among the factors in the model for Men, $\chi^2 (8, n = 160) = 20.827, p = .008, CFI = .976, RMSEA = .100$.

Table 1

Demographic and Risk-Related Data for Men and Women

Variable	Men (<i>n</i> = 160) <i>n</i> (%)	Women (<i>n</i> = 313) <i>n</i> (%)	Total (<i>n</i> = 473) <i>n</i> (%)	$\chi^2(df)$
Ethnicity				ns
White	65 (40.6)	128 (40.9)	193 (40.8)	
Black	51 (31.9)	94 (30.0)	145 (30.7)	
Asian	0 (.0)	2 (.6)	2 (.4)	
Native American	5 (3.1)	18 (5.8)	23 (4.9)	
Multiracial or Other	39 (24.4)	71 (22.7)	110 (23.3)	
Hispanic/Latino	38 (23.8)	67 (21.4)	105 (22.2)	ns
Educational level				14.68 (4)
9th grade	13 (8.1)	47 (15.0)	60 (12.7)	
10th–11th grade	45 (28.1)	83 (26.5)	128 (27.1)	
HS Diploma or GED	75 (46.9)	101 (32.3)	176 (37.2)	
2-year degree	19 (11.9)	64 (20.4)	83 (17.5)	
4-year BA	8 (5.0)	18 (5.8)	26 (5.5)	
Marital Status				ns
Single, never married	117 (73.1)	201 (64.2)	318 (67.2)	
Married	18 (11.3)	36 (11.5)	54 (11.4)	
Separated	12 (7.5)	34 (10.9)	46 (9.7)	
Divorced	12 (7.5)	32 (10.2)	44 (9.3)	
Widowed	1 (.6)	10 (3.2)	11 (2.3)	
Has main partner	112 (70.0)	251 (80.2)	363 (76.7)	6.16 (1)
Income last year				10.52 (3)
<\$10,000	88 (62.4)	212 (73.4)	300 (69.8)	
\$10,000–19,999	22 (15.6)	46 (15.9)	68 (15.8)	
\$20,000–34,999	20 (14.2)	22 (7.6)	42 (9.8)	
\$35,000	11 (7.8)	9 (3.1)	20 (4.7)	
Current employment				15.01 (3)
Full-time	43 (26.9)	47 (15.0)	90 (19.0)	
Part-time	20 (12.5)	35 (11.2)	55 (11.6)	
Not working now	88 (55.0)	223 (71.2)	311 (65.8)	
Other	9 (5.6)	8 (2.6)	17 (3.6)	
STI history				21.65 (2)
None	111 (69.4)	148 (47.3)	259 (54.8)	
Yes, not in last year	32 (20.0)	120 (38.3)	152 (32.1)	
Yes, in last year	17 (10.6)	45 (14.4)	62 (13.1)	
Injection drug use				ns
Never	131 (83.4)	249 (79.8)	380 (81.0)	
<Once a month to twice per week	9 (5.7)	31 (9.9)	40 (8.5)	
Almost daily/daily	17 (10.8)	32 (10.3)	49 (10.4)	

Variable	Men (<i>n</i> = 160) <i>n</i> (%)	Women (<i>n</i> = 313) <i>n</i> (%)	Total (<i>n</i> = 473) <i>n</i> (%)	$\chi^2(df)$
Used condom last sex	52 (32.5)	75 (24.0)	127 (26.8)	3.93 (1)
Stage of CU				ns
Precontemplation	67 (42.4)	111 (35.5)	178 (37.8)	
Contemplation	54 (34.2)	143 (45.7)	197 (41.8)	
Preparation	19 (12.0)	33 (10.5)	52 (11.0)	
Action	8 (5.1)	13 (4.2)	21 (4.5)	
Maintenance	10 (6.3)	13 (4.2)	23 (4.9)	
Exchanged sex for money or drugs	38(23.8)	159(50.8)	197 (41.7)	31.88 (1)
CSA ^a	99(62)	210(67)	309(65)	ns
Exhibit	94(59)	196(63)	290(61)	ns
Touch	57(36)	158(50)	215(45)	9.42 (1)
Penetration	30(19)	103(33)	133(28)	10.50 (1)
Rape ^b (lifetime)	16(10)	141(46)	157(36)	58.00 (1)

Note: Minor differences in sample sizes across cells reflect missing data. Significant Chi-squared values are reported ($p < .05$).

^a Occurrence of CSA was determined if the participant reported one or more events on any of the items contributing to the scale.

^b Occurrence of rape was determined if the participant responded “probably yes,” or “definitely yes” to the item on the SV scale that asked if he or she had experienced rape.

Table 2

Descriptive Statistics for MMOHR Variables for Men and Women

Variable	Men (n = 160)		Women (n = 313)		Total (n = 473)		η^2
	M	SD	M	SD	M	SD	
CSA ^a (range: 1–4)	1.62	.74	1.82	.93	1.75	.87	.013
Exhibit	2.01	1.03	2.07	1.07	2.05	1.06	—
Touch ^a	1.62	.94	1.92	1.10	1.82	1.06	.018
Penetration ^a	1.25	.61	1.50	.88	1.42	.81	.020
SV ^a (range: 1–4)	1.91	.60	2.44	.99	2.26	.91	.080
Depression ^a (range: 1–5)	2.77	.76	3.13	.82	3.01	.82	.041
Sexual assertiveness CU (range: 1–5)	2.91	.88	2.99	.93	2.96	.91	—
Condom frequency (range: 1–5)	2.32	1.35	2.07	1.24	2.16	1.28	—
Condom stage of change (range: 1–5)	1.99	1.15	1.96	1.00	1.97	1.05	—
Protected sex ratio (range: .0–1.0)	.33	.39	.25	.35	.27	1.28	—

^a. Significant ($p < .05$) sex differences were found.

Table 3

Correlations Among Model Variables (n = 473)

Variables	SV	DEP	SASCU	CU	SOC	PS
Child sexual abuse (CSA)	.39**	.24**	-.09	-.08	-.06	-.05
Sexual victimization (SV)	—	.37**	-.19**	-.09*	-.11*	-.13**
Depression (DEP)		—	-.13**	-.10*	-.08	-.13**
Sexual assertiveness condom use (SASCU)			—	.41**	.45**	.39**
Condom use frequency (CU)				—	.77**	.85**
Condom stage of change (SOC)					—	.74**
Protected sex ratio (PS)						—

* Correlation is significant at $p < .05$ (two-tailed).** Correlation is significant at $p < .01$ (two-tailed).

Table 4

Fit Indices for Multiple Sample Structural Models 1–6

Model ^a	χ^2	df	CFI	RMSEA	p-value
Model 1	31.503	16	.990	.041	.012
Model 2	31.993	18	.991	.038	.022
Model 3	32.032	19	.992	.038	.031
Model 4	36.892	22	.991	.038	.024
Model 5	57.784	29	.983	.046	.001
Model 6	43.000	26	.990	.037	.019

^aModel 1: Test of congruence model (equal constructs; no constraints); Model 2: Test of tau-equivalent model (equal factor loadings); Model 3: Test of equal variances; Model 4: Test of equal covariances; Model 5: Test of parallel model (equal path coefficients); Model 6: Test of partial invariance model (3 paths released).

Note: For Models 1 to 5, each model includes the constraints of the previous model.