

Psychosocial Correlates of Unprotected Sex Without Disclosure of HIV-Positivity among African-American, Latino, and White Men Who Have Sex with Men and Women

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Abstract African-American, Latino, and White men who have sex with men and women (MSMW) may be a bridge of HIV transmission from men to women. Very little research has directly compared culturally specific correlates of the likelihood of unprotected sex among MSMW. The present study examined psychosocial correlates of unprotected sex without disclosure of HIV status with male and female partners among 50 African American, 50 Latino, and 50 White HIV-positive MSMW recruited from AIDS service organizations in Los Angeles County. Multivariate logistic regressions were conducted to examine relationships of race/ethnicity and psychosocial variables (e.g., condom attitudes, self-efficacy for HIV disclosure, sexual identification) to unprotected sex without disclosure of HIV status, for male and female partners separately. For female partners, different effects emerged by race/ethnicity. Among African-Americans, less exclusively homosexual identification and low self-efficacy for disclosure of HIV

status to female partners were associated with unprotected sex without disclosure; among Latinos, less exclusively homosexual identification and negative attitudes about condoms were significant. Participants who were more exclusively homosexually identified, who held less positive condom attitudes, and who had low self-efficacy for disclosure to female partners were more likely to have unprotected sex without disclosure of HIV status to male partners. Culturally tailored community-level interventions may help to raise awareness about HIV and bisexuality, and decrease HIV and sexual orientation stigma, thereby increasing African-American and Latino MSMW's comfort in communicating with their female partners about sexuality, HIV and condoms. Addressing norms for condom use and disclosure between male partners is recommended, especially for homosexually identified MSMW.

Keywords HIV/AIDS · African-American · Latino · Homosexuality · Bisexuality · Sexual risk

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Introduction

African-American and Latino men who have sex with men and women (MSMW) living with HIV are understudied populations. AIDS rates among African-Americans and Latinos are higher than those of other racial/ethnic groups (Centers for Disease Control and Prevention [CDC], 2006). In 2005, African-Americans accounted for 13% of the adult U.S. population, but 49% of AIDS cases (CDC, 2006); Latinos accounted for 14% of the adult U.S. population and 21% of AIDS cases. Sexual contact with men accounts for the majority of known cases of HIV among African-American and Latino men and women (CDC, 2006). The CDC's HIV/AIDS surveillance reports do not include MSMW as a transmission category; thus, estimation of transmission behaviors is difficult in this population. However,

research suggests that African-American and Latina women may be becoming infected through sexual contact with male partners who also have sex with men (Montgomery, Mokotoff, Gentry, & Blair, 2003). African-American, White, and Latino MSMW are thought to be a bridge of transmission from men to women (Cargill & Stone, 2005; Chu, Peterman, Doll, Buehler, & Curran, 1992; Montgomery et al., 2003; Wohl et al., 2002).

Although HIV affects African-American and Latino communities disproportionately, African-American and Latino men do not report higher rates than White men of sexual behaviors that may transmit HIV (Harawa et al., 2004; Mansergh et al., 2002; Millett, Peterson, Wolitski, & Stall, 2006; Stokes, Vanable, & McKirnan, 1996). However, patterns of sexual partners and identification appear to differ by race/ethnicity. As compared to White men who have sex with men (MSM), African-American and Latino MSM are more likely to also have female partners and are less likely to identify as gay versus bisexual or heterosexual (Agronick et al., 2004; Chu et al., 1992; Millett, Malebranche, Mason, & Spikes, 2005; Montgomery et al., 2003; Wolitski, Jones, Wasserman, & Smith, 2006). Bisexual men also exhibit higher levels of risk behavior with their female partners (Ekstrand et al., 1994; Wold et al., 1998) than they do with their male partners and report higher levels of unprotected sex with male partners than do gay-identified men (Agronick et al., 2004).

Prior research suggests that racial/ethnic differences in patterns of sexual partners and identification among MSM may stem from culturally specific psychosocial factors related to sexuality and HIV (Poppen, Reisen, Zea, Bianchi, & Echeverry, 2004; Stokes, Vanable, et al., 1996; Williams, Wyatt, Resell, Peterson, & Asuan-O'Brien, 2004). African-American and Latino MSM and MSMW may not openly identify as gay or bisexual, respectively, due to stigma associated with homosexuality and HIV in communities of color (Almaguer, 1991; Carrier, 1989; Carrier & Wolf, 1985; Diaz, 1998; Doll, Petersen, White, Johnson, & Ward, 1992; Jarama, Kenamer, Poppen, Hendricks, & Bradford, 2005; Lichtenstein, 2000; Mason, Marks, Simoni, Ruiz, & Richardson, 1995; Mays, Cochran, & Zamudio, 2004; Mutchler, Chion, Tran, & Klosinski, 2001; Stokes & Peterson, 1998; Stokes, Vanable, et al., 1996; Wohl et al., 2004). In African-American and Latino communities, socio-cultural norms promoting masculinity and procreation and denigrating homosexuality are thought to inhibit MSMW from communicating openly about HIV and condom use or disclosing their sexuality or HIV status to female partners (Harawa et al., 2004; Miller, Serner, & Wagner, 2005; O'Donnell et al., 2002; Ortiz Hernandez & Torres, 2005). For example, in a qualitative study of 30 African-American MSM and MSMW living with HIV (Harawa, Williams, Ramamurthi, & Bingham, 2006), participants with female partners reported fears of sus-

picion about their sexual orientation if they raised condom use and of rejection if they disclosed their HIV status.

In sum, prior research has indicated that sexual identification and lack of disclosure may be intertwined with sexual risk issues, particularly among African-American and Latino MSM who also have sex with women. However, little prior research has directly explored these psychosocial factors and behaviors in studies specifically designed for MSMW living with HIV, despite concerns about increasing infection rates among MSM, MSMW, and their female partners in communities of color. MSMW are often grouped together with MSM in terms of HIV/AIDS research and prevention efforts (Department of Health Services [DHS], 2000; Hays et al., 1997; Kalichman, Kelly, & Rompa, 1997; Parsons, 1999; Parsons et al., 2005). Thus, information regarding HIV risk behaviors and correlates of unprotected sex among MSMW, as a subgroup, is scarce. Furthermore, little work has focused on MSMW of color living with HIV. However, the HIV prevention needs of people living with HIV versus those who are HIV-negative are dissimilar, because unprotected sex has a qualitatively different meaning for those who are positive (Kalichman, 2000). Hence, research is needed that examines the correlates of transmission risk behavior among men living with HIV who have both male and female partners. Such information would allow for the development of secondary HIV prevention interventions that take into account socio-cultural influences on the risk behaviors of African-American, White, and Latino MSMW separately.

In the present study, we recruited a sample of African-American, Latino, and White MSMW living with HIV to examine psychosocial correlates of unprotected sex without disclosure of HIV status. We examined the associations of attitudes about condom use, self-efficacy for disclosure about HIV status, and sexual identification, with unprotected sex without disclosure with both male and female partners. Based on prior research (Diaz, Ayala, Bein, Henne, & Marin, 2001; Herek & Glunt, 1995; Jarama et al., 2005; Stokes & Peterson, 1998; Stokes, Taywaditep, Vanable, & McKirnan, 1996), we hypothesized that greater bisexual or heterosexual identification would be associated with a higher likelihood of engaging in unprotected sex without disclosure, especially among African-American and Latino MSMW. Moreover, because African-American and Latino MSMW may be relatively unexposed to prevention messages about condoms and disclosure of HIV status to their sexual partners, as compared to Whites, we also hypothesized that they would hold negative attitudes about condom use and have low self-efficacy for disclosure of HIV status, which would in turn be associated with engaging in unprotected sex. However, because prior research has rarely compared MSMW living with HIV from these three racial/ethnic groups, we could not make firm predictions about racial/

ethnic differences in psychosocial correlates of unprotected sex with male and female partners. The present study is therefore exploratory in its comparisons by race/ethnicity.

Method

Participants

The sample consisted of 150 MSMW living with HIV. MSMW was defined as self-reported sex with male and female partners in the previous 5 years. This definition is consistent with definitions used in prior work (Diaz et al., 1993; Stokes, Vanable, et al., 1996). Using a longer time period allows for analyses of sexual patterns and relationships over time. Men who engage in bisexual behaviors may not identify as bisexual and may not engage in polyamorous relationships; their sexual practices with men and women may only be captured over a time period that is measured over several years (Stokes, Taywaditep, et al., 1996). A behavioral definition over a longer period of time also allows us to capture information about whether participants ever engaged in unprotected sex with either sex without disclosing their HIV status. We employed targeted sampling in terms of race/ethnicity (50 African-American, 50 Latino, 50 White). Within the Latino sample, we recruited 25 Spanish monolingual Latino men and 25 men who spoke English. Participants were recruited using flyers poster at all eight social service and health-related AIDS organizations funded by Los Angeles County to target MSMW for primary or secondary prevention activities in 2002. Potential participants were screened via phone. Only participants who reported being African-American, Latino, or White, and were male, living with HIV, and behaviorally bisexual in the past 5 years were selected. Participants were offered \$40 to participate in a face-to-face interview that lasted between 90 and 120 min. The interviews were administered by trained project staff in a private room at AIDS Project Los Angeles (APLA), a large AIDS service organization. Informed consent was obtained. The University of California, Los Angeles and the APLA Institutional Review Boards approved the study design and materials.

Measures

We used assessment instruments that have shown strong psychometric properties in prior research that included HIV+ MSMW (Parsons, 1999; Stall, 1999). We refined the items based on our prior formative research with HIV+ MSMW. For instance, we changed the instrument to allow for up to two primary partners (one male and one female; or one transgender and one male or female) and up to four casual male and female partners. Separate and parallel partner-related questions assessed behaviors with male and female partners. Sexual activity was based on retrospective self-reports.

Dependent Variables

Sexual Behavior

We asked participants to report numbers of sexual partners by gender, serostatus, and relationship partner status (primary versus casual). Detailed sexual histories (including vaginal and anal intercourse, and condom use) were obtained for the last male and/or female primary partners and up to four casual sexual partners. We asked participants if they had engaged in any unprotected anal or vaginal intercourse since they learned that they were HIV-positive. The primary dependent variables for the present analysis were two questions assessing unprotected sexual intercourse without disclosure of HIV status; participants were instructed to respond based on their sexual behavior within the past 5 years, and only since they learned that they were HIV-positive. Specifically, we asked participants, “Since you learned that you were HIV-positive, have you had unprotected anal intercourse with one or more male partners without disclosing your HIV status?” and “Since you learned that you were HIV-positive, have you had unprotected anal or vaginal intercourse with one or more female partners without disclosing your HIV status?” Asking about risk behavior since HIV diagnosis allowed us to capture behaviors among a range of participants who may have had unprotected sex in the past, but who may not have been sexually active at the time of the interview.

Sociodemographic and Psychosocial Factors

Sociodemographic Characteristics

Measures included items on race/ethnicity (African-American, Latino, White), gender, household income, education (less than high school graduate to graduate degree), and age. Income was dichotomized with a median split into $<$ or \geq \$8,240. In 2002, a single person household earning \$8,240 or less in annual income qualified for federal benefits which are dependent on poverty status. Income categories were based on the 2002 federal poverty guidelines, which are often used by AIDS service organizations to establish program participation.

Sexual Orientation

The Klein Sexual Orientation Grid (Klein, Sepekoff, & Wolf, 1990) asks participants to rate their sexual feelings (i.e., the extent to which a person is sexually attracted to each sex), sexual activities (i.e., the extent to which a person engages in sexual activity with each sex), romantic feelings (i.e., the extent to which a person falls in love with people of each sex), and use of pornographic or erotic materials (i.e., magazines or video) on a 7-point scale with labels for exclusively heterosexual (0), equally heterosexual and homosexual (3), and exclusively

homosexual (6). Ratings of these four items were averaged to produce an overall score on the scale. Reliability for the four-item scale was high ($\alpha = .87$).

Negative Condom Attitudes

Attitudes about condom use were measured with a four-item scale adapted from the Seropositive Urban Men's Survey and the Urban Men's Health Study (Parsons, 1999; Stall, 1999) and consisted of the following items: "Using condoms can be difficult," "Using condoms makes sex less enjoyable," "Condoms can make you lose your hard-on (erection)," and "Condoms break too often." Each item used a response scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), such that higher scores indicated more negative attitudes towards condoms. Reliability for this scale was low, but adequate ($\alpha = .66$).

Self-efficacy for Disclosure of HIV Status

Self-efficacy regarding disclosure of HIV status was measured separately for male and female partners, using 15-item scales (Hart, Wolitski, Purcell, Parsons, & Gomez, 2005). All items started with the stem, "I can disclose my HIV status before having sex, even to..."; sample scenarios included: "...a really attractive new sex partner," "...a new sex partner who I am afraid would tell other people my status," and "...a partner who wouldn't have sex with me if he knew." Participants were asked to think about "a man or male" for one 15-item set, and about "a woman or female" for the other 15-item set. The response scale was 1, *absolutely sure I cannot* to 5, *absolutely sure I can*. Reliability of the 15 items for disclosure to male and female partners was high ($\alpha = .94$ and $\alpha = .95$, respectively).

Statistical Analyses

Descriptive statistics were calculated for all sociodemographic, psychosocial, and sexual behavior outcome variables overall, and within racial/ethnic subgroups. Bivariate tests compared African-Americans, Latinos, and Whites. Chi-square tests were used to test differences in categorical variables (e.g., any unprotected sex with male partners in past 3 months). One-way analyses of variance (ANOVA) were used to test for differences in continuous variables (e.g., negative condom attitudes) across race/ethnicity; Bonferroni adjustments were used for post hoc comparisons.

Bivariate logistic regressions were used to screen potential sociodemographic and psychosocial variables for inclusion in multivariate models on the basis of their associations with unprotected sex without disclosure of HIV status, for male and female partners separately. Eight bivariate models were conducted, corresponding to male or female partner outcomes within each of four samples: African-American, Latino, White,

and full sample. Any correlate with two-sided p values $\leq .05$ in any of the six models involving a single racial/ethnic group was retained for all multivariate models.

The eight primary multivariate models directly paralleled the eight series of bivariate models in terms of the two outcomes and four samples, and used a common set of correlates as described above, with the exception that full sample models also include indicators of African-American race and Latino ethnicity, with non-Latino whites the reference category. Two additional series of multivariate models on the full sample (one series each for male and female partner outcome) added interactions between race/ethnicity and each of the retained correlates one at a time to preserve statistical power. Within each model, a Wald test was used to assess the statistical significance of each correlate by race/ethnicity interaction.

Results

Descriptive Statistics for Sociodemographics, Psychosocial Factors, and Sexual Behaviors

Table 1 shows the sociodemographic characteristics of the sample. The majority of participants had at least some college education, with no significant differences by race/ethnicity. Over one-tenth reported no income and one-third had incomes between \$1 and \$8,240. Reported annual income significantly varied by race/ethnicity, $\chi^2(2) = 7.35$, $p < .05$. Relatively more Latinos (56%) reported an annual household income below \$8,240 than did African-American (32%) and White men (34%). Participants averaged 40 years of age, and participants' age significantly differed by race/ethnicity, $F(2, 147) = 3.45$, $p < .05$. African-Americans were somewhat older than Latinos.

Attitudes toward condom use were neutral on average ($M = 3.21$) and differed by race/ethnicity, $F(2, 147) = 4.22$, $p < .05$. White men had significantly more negative attitudes towards condoms than did Latino men, $p < .05$, whereas African-Americans did not differ from either group. Responses on the self-efficacy for disclosure scale (obtained separately for male and female partners) differed by race/ethnicity for both male and female partners, $F(2, 147) = 11.70$, $p < .001$ and $F(2, 147) = 10.16$, $p < .001$, respectively, and averaged near the midpoint of the scale in each case. In particular, Whites had greater self-efficacy to disclose to male and to female partners, compared to African-Americans and Latinos.

In the full sample, unprotected sex without disclosure of HIV status occurred more frequently for male partners (47%) than for female partners (28%), $p < .05$. African-American (38%) and Latino (30%) men were more likely to report unprotected vaginal or anal sex without disclosure with a female partner compared to White men (16%), $\chi^2(2) = 6.15$, $p < .05$.

Table 1 Sociodemographic characteristics, psychosocial factors, and sexual risk behaviors by group

	African-American (<i>n</i> = 50)	Latino (<i>n</i> = 50)	White (<i>n</i> = 50)	Combined (<i>N</i> = 150)
<i>Education (%)</i>				
Less than 11th grade	12	28	8	16
High school, GED	26	22	26	25
Some college	36	36	44	35
College graduate	18	10	6	11
Some graduate school	8	4	14	9
<i>Income (%)[*]</i>				
Low (<\$8,240)	32	56	34	41
High (≥\$8,240)	68	44	66	59
<i>Age (in yrs) (M, SD)[*]</i>				
	42.0	38.2	39.1	39.8
	7.4	8.1	7.4	7.7
<i>Homosexual (M, SD)^a</i>				
	3.4	4.0	3.9	3.8
	1.5	1.2	1.4	1.4
<i>Negative condom attitudes (M, SD)^{b,*}</i>				
	3.2	3.0	3.5	3.2
	1.0	1.1	0.8	1.0
<i>Disclosure self-efficacy (M, SD)^b</i>				
<i>Male partners (M, SD)^{***}</i>				
	3.7	3.4	4.2	3.7
	0.9	0.9	.8	0.9
<i>Female partners (M, SD)^{***}</i>				
	3.5	3.4	4.1	3.7
	0.9	1.0	0.8	1.0
<i>Unprotected anal sex without HIV status disclosure, male partner (%)</i>				
	46	56	38	47
<i>Unprotected vaginal or anal sex without HIV status disclosure, female partner (%)[*]</i>				
	38	30	16	28
<i>Sex, last 3 months (%)</i>				
<i>With any male partner[*]</i>				
	88	96	76	87
<i>With any female partner^{**}</i>				
	62	54	32	49
<i>With casual male partner^{**}</i>				
	84	82	60	75
<i>With casual female partner^{**}</i>				
	50	40	18	36
<i>Sex with both men and women, last 3 months (%)[*]</i>				
	54	52	28	45
<i>Primary partner, last 5 years (%)</i>				
<i>Only male primary partner</i>				
	26	46	32	35
<i>Only female primary partner</i>				
	12	8	12	11
<i>Both a male and female primary partner</i>				
	46	26	38	37
<i>Neither a male nor female primary partner</i>				
	16	20	18	18

* $p \leq .05$; ** $p \leq .01$;*** $p \leq .001$ ^a Absolute range, 0–6^b Absolute range, 1–5

Sexual behaviors also differed by race/ethnicity. Relatively more African-American and Latino men reported having had recent sex with all partner types and having had sex with both male and female partners in the past 3 months than did White men. Compared to African-American and Latino men, White men were less likely to report sex in the last 3 months with any male partner, $\chi^2(2) = 8.77, p < .05$, any female partner, $\chi^2(2) = 9.66, p < .01$, a casual male partner, $\chi^2(2) = 9.54, p < .01$, or a casual female partner, $\chi^2(2) = 11.63, p < .01$. Similarly, in the last 3 months, 28% of Whites reported sex with both a male and female partner, whereas 54% of African-American men and 52% of Latino men reported sex with both a male and female partner, $\chi^2(2) = 8.47, p < .05$. No significant differences

emerged along the Klein scale measures of sexual identification by race/ethnicity (see Table 2). The overall mean scores for each of the four scales were closer to the end of the scale, indicating greater homosexual identification, with means between 3.34 and 3.90.

Unprotected Sexual Intercourse Without Disclosure of HIV Status

Based on the results of the bivariate tests, all multivariate models included sexual identification, condom attitudes, and disclosure self-efficacy to male and female partners; education, income, and age were excluded because they were not signif-

Table 2 Klein Sexual Orientation scale item means and percentage distributions by race/ethnicity

	Klein Scale Rating (%)								
	<i>M</i>	<i>SD</i>	Exclusively homosexual (0)	Predominantly heterosexual, incidentally homosexual (1)	Predominantly heterosexual, more than incidentally homosexual (2)	Equally heterosexual and homosex- ual (3)	Predominantly homosexual, more than incidentally heterosexual (4)	Predominantly homosexual, incidentally heterosexual (5)	Exclusively homosexual (6)
<i>Sexual feelings</i>									
African-American	3.38	1.60	6	10	2	36	28	4	14
Latino	4.10	1.40	2	0	8	28	20	22	20
White	4.00	1.47	4	2	10	10	36	24	14
Combined	3.83	1.52	4	4	7	25	28	16	1
<i>Sexual activities</i>									
African-American	3.56	1.51	0	14	6	32	16	22	10
Latino	4.18	1.52	0	6	12	14	14	34	20
White	4.14	1.37	0	8	4	16	20	42	10
Combined	3.96	1.49	0	9	7	21	17	33	13
<i>Romantic feelings</i>									
African-American	3.46	1.81	8	8	8	30	18	8	20
Latino	4.34	1.59	4	2	2	22	20	18	32
White	3.90	1.99	12	6	2	16	10	32	22
Combined	3.90	1.83	8	5	4	23	16	19	25
<i>Pornographic materials</i>									
African-American	3.30	1.87	10	6	12	38	4	10	20
Latino	3.25	1.64	8	4	10	44	13	6	15
White	3.49	1.67	6	4	13	32	15	15	15
Combined	3.34	1.72	8	5	12	38	10	10	17

icantly associated with the outcomes in bivariate tests for any specific racial/ethnic group.

Female Partners

The bivariate and multivariate models for unprotected sex without disclosure to female partners are shown in Table 3. No bivariate tests were significant in the African-American subsample. Among Latinos, less exclusively homosexual identification was significantly related to a higher likelihood of unprotected sex without disclosure to female partners. Among Whites, higher self-efficacy for disclosure to both female and male partners was significantly associated with a lower likelihood of unprotected sex without disclosure to female partners. In bivariate tests with the overall sample, older age, less exclusively homosexual identification, and lower disclosure self-efficacy to both male and female partners were significantly related to a higher likelihood of unprotected sex without disclosure.

In multivariate logistic regression analyses, less exclusively homosexual identification was significantly related to engaging in unprotected sex without disclosure to female partners in the overall model. None of the correlates were significantly related to engaging in unprotected sex without disclosure to female partners in the White subsample. Among African-Americans, unprotected sex without disclosure to female partners was more likely among participants who had less exclusively homosexual identification and low self-efficacy to disclose to female partners. Among Latinos, unprotected sex without disclosure to female partners was more likely among participants who had a less exclusively homosexual orientation and who held more negative condom attitudes.

Male Partners

As shown in Table 4, bivariate analyses indicated that self-efficacy for disclosure of HIV status to both male and female partners was related to a lower likelihood of unprotected sex

Table 3 Bivariate and multivariate logistic regressions predicting any unprotected sex with a female partner without disclosure of HIV status (last 5 years)

	Unadjusted odds ratio (95% Confidence Interval)				Adjusted odds ratio (95% Confidence Interval)			
	African-American (n = 50)	Latino (n = 50)	White (n = 50)	Combined (N = 150)	African-American (n = 50)	Latino (n = 50)	White (n = 50)	Combined (N = 150)
African-American (vs. White)	-	-	-	3.2 (1.2–8.3)	-	-	-	2.3 (0.8–6.4)
Latino (vs. White)	-	-	-	2.3 (0.9–5.9)	-	-	-	1.9 (0.6–5.8)
Age (per year)	1.1 (1.0–1.2)	1.1 (1.0–1.1)	1.0 (1.0–1.2)	1.1 (1.0–1.1)*	-	-	-	-
Education ^a	1.3 (0.8–2.3)	0.8 (0.5–1.4)	1.1 (0.5–2.1)	1.0 (0.7–1.4)	-	-	-	-
Annual household income <\$8,240	2.4 (0.6–8.8)	2.5 (0.7–8.8)	0.8 (0.2–4.0)	1.8 (0.8–3.8)	-	-	-	-
Homosexual identification	0.7 (0.5–1.1)	0.5 (0.3–.9)*	1.1 (0.6–1.9)	0.7 (0.6–0.9)*	0.6 (0.3–0.9)*	0.4 (0.2–0.8)*	1.3 (0.7–2.4)	0.7 (0.6–0.9)*
Negative condom attitudes	0.8 (0.5–1.4)	1.7 (0.9–3.1)**	1.5 (0.6–4.1)	1.1 (0.8–1.6)	0.8 (0.4–1.5)	2.4 (1.1–5.4)*	1.5 (0.5–4.4)	1.2 (0.8–1.8)
High disclosure self-efficacy to female partner	0.6 (0.3–1.2)	0.7 (0.3–1.3)	0.3 (0.1–.9)*	0.5 (0.4–0.8)**	0.1 (0.0–0.9)*	0.7 (0.1–4.9)	0.3 (0.0–3.7)	0.5 (0.2–1.3)
High disclosure self-efficacy to male partner	0.7 (0.4–1.4)	0.6 (0.3–1.2)	0.4 (0.2–1.0)*	0.5 (0.4–0.8)**	5.6 (0.7–42.7)**	1.3 (0.2–10.1)	1.0 (0.1–19.8)	1.3 (0.4–3.9)

* $p < .05$; ** $p < .01$; *** $p < .10$ ^a Per level displayed in Table 1

without disclosure among African-Americans; self-efficacy for disclosure to female (but not male) partners was significantly related to less unprotected sex without disclosure in the overall sample. Negative attitudes about condoms were associated with a higher likelihood of unprotected sex without disclosure among Latinos and Whites. Stronger homosexual identification was significantly related to a higher likelihood of unprotected sex without disclosure to male partners among Whites and in the overall sample.

In the multivariate logistic regression model (Table 4), stronger homosexual identification was significantly associated with a higher likelihood of unprotected sex without disclosure to male partners among Whites and in the overall sample. Negative condom attitudes were associated with a higher likelihood of unprotected sex without disclosure to male partners among Latinos and Whites and in the overall sample. As indicated by a significant condom attitudes by race/ethnicity interaction, Wald $\chi^2(2) = 7.3$, $p < .05$, this effect was stronger for Latinos and Whites than for African-Americans ($p < .05$ for each). Self-efficacy for disclosure to female partners was related to a lower likelihood of unprotected sex without disclosure among Whites and in the overall sample, whereas self-efficacy for disclosure to male partners was related to a higher likelihood of unprotected sex without disclosure. Because both types of disclosure self-efficacy were highly correlated ($r = .92$) and these effects were not present in bivariate analyses, the opposite findings may be due to a suppressor effect.

Discussion

Our study of MSMW living with HIV found considerable differences by race/ethnicity and partner gender in the psychosocial correlates of unprotected sex without disclosure of HIV status. For female partners, less exclusively homosexual identification was related to a greater probability of unprotected sex without disclosure; different effects emerged by racial/ethnic subgroup. Among African Americans, less exclusively homosexual identification and low self-efficacy for disclosure of HIV status to female partners was associated with unprotected sex without disclosure, and among Latinos, less exclusively homosexual identification and negative attitudes about condoms were significant correlates; none of the effects were significant among Whites. Since Whites were significantly less likely to report unprotected vaginal or anal sex without disclosure with a female partner compared to African Americans and Latinos, non-significant effects for Whites with female partners should be interpreted with caution because of reduced power to detect small-to-moderate effects among Whites. Participants who were more exclusively homosexually identified, who held less positive condom attitudes, and who had low self-efficacy for disclosure to female partners were more likely to have unprotected

Table 4 Bivariate and multivariate logistic regressions predicting any unprotected sex with a male partner without disclosure of HIV status (last 5 years)

	Unadjusted odds ratios (95% Confidence Interval)				Adjusted odds ratios (95% Confidence Interval)			
	African-American (n = 50)	Latino (n = 50)	White (n = 50)	Combined (N = 150)	African-American (n = 50)	Latino (n = 50)	White (n = 50)	Combined (N = 150)
African-American (vs. White)	–	–	–	0.7 (0.3–1.5)	–	–	–	1.4 (0.6–3.5)
Latino (vs. White)	–	–	–	0.7 (0.3–1.5)	–	–	–	2.5 (0.9–6.5)***
Age (per year)	1.0 (0.9–1.1)	1.0 (1.0–1.1)	1.0 (0.9–1.1)	1.0 (1.0–1.1)	–	–	–	–
Education ^a	1.0 (0.6–1.7)	0.7 (0.4–1.1)	1.4 (0.8–2.4)	0.9 (0.7–1.2)	–	–	–	–
Annual household income <\$8,240	0.9 (0.3–2.8)	0.9 (0.3–2.8)	1.2 (0.4–4.0)	0.8 (0.4–1.6)	–	–	–	–
Homosexual identification	1.2 (0.8–1.7)	1.6 (0.9–2.6)***	1.9 (1.1–3.3)*	1.4 (1.1–1.8)**	1.1 (0.7–1.7)	1.4 (0.8–2.5)	2.7 (1.2–5.8)*	1.5 (1.1–2.0)**
Negative condom attitudes	0.8 (0.4–1.3)	2.2 (1.2–4.1)**	2.3 (1.0–5.4)*	1.3 (1.0–1.8)***	0.6 (0.3–1.3)	2.7 (1.3–5.6)**	3.1 (1.2–8.4)*	1.5 (1.1–2.2)*
High disclosure self-efficacy to female partner	0.3 (0.1–0.7)**	0.9 (0.5–1.6)	1.1 (0.5–2.2)	0.7 (0.5–0.9)*	0.2 (0.0–1.3)***	0.2 (0.0–1.3)***	0.8 (0.0–1.0)*	0.3 (0.1–0.8)*
High disclosure self-efficacy to male partner	0.4 (0.2–0.9)*	1.0 (0.6–2.0)	1.3 (0.6–2.8)	0.8 (0.5–1.1)	1.9 (0.2–14.6)	6.7 (0.8–56.1)***	16.4 (1.0–258.2)*	2.9 (1.0–8.8)***

* $p < .05$; ** $p < .01$; *** $p < .10$ ^a Per level displayed in Table 1

sex without disclosing their HIV status to male partners. In racial/ethnic subgroup analyses for male partners, the effect of condom attitudes was significant among Latinos and Whites, and the effect of homosexual identification was significant among Whites only.

Our results for sexual identification are consistent with other research findings that less exclusively homosexual identification among MSMW is associated with greater sexual risk behavior with female partners (Weatherburn, Hickson, Reid, Davies, & Crosier, 1998; Wolitski et al., 2006). Women may not be aware of their male partners' sexual activities with men (Montgomery et al., 2003). African-American MSMW who initiate condom use with their primary female partners may fear they will raise suspicions that they have other partners, or even that they have male partners, especially if they have not previously used or discussed condoms in the relationship (Harawa et al., 2006). Consequently, MSMW may engage in unprotected sex without disclosure rather than risk revealing or being questioned about their extra-relationship sexual activities, especially those with other men. Further, MSMW who have high levels of heterosexual identification may be less likely to be aware of and exposed to culturally tailored HIV prevention messages. MSMW's attitudes about condoms may be formed in isolation from culturally relevant prevention messages about the positive aspects of using condoms, and they may have less positive attitudes towards condoms as a result.

Among African Americans in our study, low self-efficacy for disclosure of HIV status was associated with unprotected sex without disclosure with female, but not male, partners. These results suggest that self-efficacy for HIV status disclosure with female partners is critical to explore for African-American HIV+ MSMW. In prior qualitative research, African-American MSM have discussed feeling isolated from both African-American and White gay communities (Kraft, Beeker, Stokes, & Peterson, 2000), and African-American MSM and MSMW living with HIV have described fears of rejection by sex partners, family members, and friends if they disclose their serostatus (Harawa et al., 2006; Williams et al., 2004). African-American MSM and MSMW may fear being further marginalized if they disclose their HIV status to partners and lose sources of social support and intimacy available to them. Furthermore, disclosure of HIV status may lead to questions about sexual orientation from female partners. MSMW who lack self-efficacy to disclose to their female partners without being rejected may consequently engage in unprotected sex without disclosure.

The relationship between self-efficacy for disclosure and unprotected sex without disclosure with female partners, although significant for African Americans, was not significant among Latinos, possibly due to other unmeasured, sociocultural moderating variables. For example, prior research with representative samples of Latino MSM recruited from gay bars and

social venues in Los Angeles, Miami, and New York found regional variation in the extent of HIV serostatus disclosure, in that Latino MSM born in Central America and Mexico were less likely to disclose than were Latino MSM from other countries (Zea, Reisen, Poppen, & Diaz, 2003). Additional research measuring both disclosure and country of origin may elucidate the reasons for the moderating effect of race/ethnicity.

A great deal of research has indicated a robust relationship between positive condom attitudes and condom use, especially among White men (Norton, Bogart, Cecil, & Pinkerton, 2005). The present study, however, is among the first to our knowledge to compare the relationship between condom attitudes and condom use among African-American, Latino, and White MSMW living with HIV. For Latinos in our study, negative condom attitudes were associated with unprotected sex without disclosure to both male and female partners. Our results for Latinos were consistent with prior research with Latino samples that has indicated significant relationships between condom use and positive condom attitudes and condom carrying behavior (Ford & Norris, 1995; Marin, Gomez, & Tschann, 1993). In a probability sample of Latino men with secondary female partners, discomfort with sexuality was related to negative attitudes about condom use and a lower likelihood of carrying condoms, which in turn were related to less frequent condom use (Marin et al., 1993). Due to cultural taboos against open discussion of sexuality and HIV (Di-Clemente, Boyer, & Morales, 1999; Jimenes, 1987; Wyatt et al., 1997), Latinos may be particularly less likely to carry condoms and to communicate with their partners about condom use. As a result, Latino men may be less receptive to prevention messages about condoms that are not sensitive to culturally specific sexual taboos. In this way, cultural forces may shape sexual scripts and perceptions about sexuality and in turn influence sexual risk behavior (Zea, Reisen, Poppen, et al., 2003).

In contrast to our findings with female partners, more exclusively homosexual identification was associated with greater sexual risk behavior with male partners, particularly for the White men. Similarly, a previous study of 408 gay and bisexual men found that “being out of the closet” was associated with unprotected sex with men, suggesting that being more homosexually identified might increase exposure to opportunities for unprotected sex with other gay or bisexual men (Hays et al., 1997). MSMW living with HIV who are more identified with homosexuality may be more likely to engage in unprotected sex with other men who are also living with HIV as a form of harm reduction (Parsons et al., 2005). Our small sample size did not allow for the power needed to detect associations by the HIV status of participants’ sexual partners. Additional research is needed to understand these divergent effects by partner gender.

In addition to its association with female partners, self-efficacy for HIV status disclosure to female partners was also

negatively associated with sexual risk behaviors with male partners. Thus, MSMW who develop the skills and confidence to disclose to their female partners may be able to transfer the skills for disclosure to their male partners. Given the difficulty MSMW express disclosing to female partners (Harawa et al., 2006), those who do develop skills for disclosure to female partners may also be more confident discussing these issues with their male partners.

HIV stigma, which is prevalent across racial and ethnic groups in the U.S. (Herek, Capitanio, & Widaman, 2002), may help to explain some of the findings in our study, including those for disclosure self-efficacy. MSMW of color may be especially vulnerable to the effects of HIV stigma (Harawa et al., 2006) and may experience multiple levels of stigma from race/ethnicity, HIV status, and sexual orientation. Moreover, the ways that HIV stigma is exhibited may vary by racial/ethnic group (Parker & Aggleton, 2003; Reidpath & Chan, 2005). For example, research suggests that some African Americans may perceive HIV to be a threat to the survival of their communities (Herek & Capitanio, 1993). Such negative attitudes can lead to discrimination against people with HIV, including avoidance, ostracism, verbal insults, and, in its most extreme form, interpersonal violence. African-American and Latino MSMW living with HIV may fear such negative consequences if they disclose their HIV status (Williams et al., 2004) or if they are seen carrying condoms (Marin, Gomez, & Tschann, 1993), particularly by their female partners. Community-level culturally sensitive interventions focused on raising awareness and decreasing stigma about HIV and sexual orientation would serve to increase MSMW’s comfort in disclosing HIV status to sexual partners and discussing condom use (Kalichman & Nachimson, 1999).

To date, no effective interventions have been developed specifically for MSMW of color living with HIV (Cargill & Stone, 2005; Mays et al., 2004). The dissimilar findings by race/ethnicity and for African Americans and Latinos in particular warrant continued attention to the unique needs of these two populations, as well as the development of HIV prevention interventions that are culturally tailored by race/ethnicity for MSMW. Skills-building exercises such as role plays with male and female sexual partners that focus on increasing self-efficacy for HIV status disclosure could be included as primary components of HIV prevention interventions, especially among African-American MSMW. Negative attitudes about condoms could be countered with programs that eroticize condom use and work to establish positive condom attitudes (Norton et al., 2005), especially for interventions with Latino and White MSMW. Such activities could be combined with peer interventions that aim to change peer norms about safer sex, in which cadres of opinion leaders are trained to raise awareness about HIV and risk reduction (Kelly, St. Lawrence, Diaz, & Stevenson, 1991; Kelly, St. Lawrence, Stevenson, & Hauth, 1992). In addition to being successful with White MSM

(Kelly et al., 1991), opinion leader interventions have been effective across numerous different types of populations, including Latino MSM (Somerville, Diaz, Davis, Coleman, & Taveras, 2006), most likely because interventions delivered by members of the community are likely to be culturally sensitive and tailored. Since we recruited our sample from the population of HIV+ MSMW seeking services at AIDS service organizations, it may also be feasible to reach African-American, Latino, and White HIV+ MSMW via traditional health promotion programs within such organizations.

Our study was, to our knowledge, one of the first to recruit a sample of African-American, Latino, and White MSMW living with HIV, as well as to compare the sexual behaviors and correlates of sexual risk among these three groups directly. Despite relatively small subsample sizes, we found significant interaction effects by race/ethnicity. Nonsignificant interaction effects should be interpreted with caution, however, because power to detect small-to-moderate differences by race/ethnicity is limited. Moreover, our findings are based on a cross-sectional study design. Thus, the direction of associations cannot be determined. We recruited a service-seeking sample of MSMW living with HIV in Los Angeles County and our results cannot be easily generalized. In addition, any observed racial/ethnic differences may be a consequence of the types of African-Americans and Latinos who self-selected into our sample. The present work should therefore be interpreted with caution, and future investigations of African-American, Latino, and White MSMW living with HIV would benefit from population-based representative studies. Our outcome variable did not allow us to compare those who did and who did not disclose their HIV status to partners. Further, the time frame for the outcome variable (i.e., since HIV diagnosis, but no more than 5 years ago) necessarily varied by participant. Participants who reported unprotected sex without disclosure may have differed in the recency of this behavior during the past 5 years. In addition, some participants had been diagnosed with HIV greater than 5 years prior; such participants could not respond to the question based on the entire time since they were diagnosed. The time frame allowed us to capture information on whether or not participants had ever had unprotected sex without disclosing their HIV-positivity to their female or male partners in the past 5 years.

Although we investigated a number of psychosocial constructs that have been related to sexual risk in prior research, we did not extensively examine socio-cultural factors that may vary by race/ethnicity. For example, although we recruited monolingual Latino MSM, the subsample was too small on which to conduct in-depth analyses related to acculturation. Greater acculturation to U.S. culture has been associated with disclosure of HIV status to parents among Latino MSM with HIV (Zea, Reisen, Poppen, Echeverry, & Bianchi, 2004), lower sexual risk behaviors (Poppen et al., 2004), and more positive attitudes about condom use (San Doval, Duran,

O'Donnell, & O'Donnell, 1995). Due to a focus on machismo and family life in traditional Latino culture (Jarama et al., 2005; Zea, Reisen, & Diaz, 2003), Latino MSMW may be less likely to identify as primarily homosexual or bisexual and may be less open about their sexuality to family members and individuals in their communities. Perceived stigma against homosexuality and bisexuality in Latino communities may be another reason why Latino MSMW would be less likely to identify as primarily homosexual or bisexual, even if they are having sex with men, and less likely to form strong connections with gay or bisexual communities. In contrast, Latino men who have assimilated into and internalized aspects of U.S. culture may be more aware of and receptive to HIV prevention messages directed toward gay and bisexual men, and therefore they may be more open to condom use. Acculturation may be an important factor to assess to understand the context of condom use and condom attitudes among Latino MSMW. Since greater homosexual identification may also increase opportunities for sex with other men (Hays et al., 1997) across racial/ethnic groups, future research with MSMW should explore associations among homosexual identification, condom attitudes, HIV disclosure self-efficacy, and involvement in gay communities and other MSM-related venues such as bathhouses and Internet sites.

In the present study, different correlates of unprotected sex without disclosure emerged by race/ethnicity among MSMW living with HIV. More negative condom attitudes and sexual identification among Latino and White MSMW, and low self-efficacy for disclosure of HIV status among African American MSMW, may contribute to risk behaviors among members of these groups. High levels of stigma regarding sexuality and HIV in African-American and Latino communities may be impeding African-American and Latino MSMW from gaining access to information about HIV prevention behaviors (such as condom use and HIV status disclosure) that primarily target (White) gay men (Huebner, Davis, Nemeroff, & Aiken, 2002; Miller et al., 2005; Ortiz Hernandez & Torres, 2005; Singer & Marxuach-Rodriguez, 1996). African-American and Latina females may be particularly vulnerable to HIV infection because their African-American and Latino MSMW's partners are more likely to identify as heterosexual, which may contribute to less communication about sex with male partners (Millett et al., 2005; Montgomery et al., 2003). Our findings suggest a critical need for HIV prevention programs that are culturally tailored and sensitive to differences in HIV prevention needs among African-American, Latino, and White MSMW living with HIV.

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