

# Drug Use, Interpersonal Attraction, and Communication: Situational Factors as Predictors of Episodes of Unprotected Anal Intercourse among Latino Gay Men

Patrick A. Wilson · Rafael M. Díaz ·  
Hirokazu Yoshikawa · Patrick E. Shrout

Published online: 5 November 2008  
© Springer Science+Business Media, LLC 2008

**Abstract** It is important to understand situational factors linked to episodes of unprotected sexual intercourse among Latino gay men (LGM), who are disproportionately affected by HIV/AIDS in the U.S. Past research has suggested that participation in difficult sexual situations mediates the relationship between socio-cultural factors and sexual risk behaviors among LGM. This study examined drug use by self and sex partners, interpersonal factors, and other key variables, each examined at the situation-level of analysis, as predictors of episodes of unprotected anal intercourse (UAI) among LGM. Study participants included 270 LGM living in New York City, Miami, and Los Angeles who reported inconsistent condom use during anal intercourse in the last year. Men participated in structured interviews in which they were asked sets of detailed questions about their most recent episode of anal intercourse in which they used condoms, and their most recent anal intercourse episode in which they did not use condoms. Conditional logistic regression

was used to compare the relevance of specific situational factors to participants' episodes of UAI and protected anal intercourse. We found that drug use by a sex partner and lacks of discussions about condom use with partners, among other situational factors, were significantly related to episodes of UAI. The findings highlight the importance of considering the impact of sexual situations and interactions with sex partners when studying HIV risk among LGM and when designing interventions.

**Keywords** Drug use · Sex partners · Latino gay men · Situational factors · Within-subjects analysis

## Introduction

Latino gay men are among the groups at greatest risk for HIV infection in the U.S. Data from the Centers for Disease Control and Prevention show that Latinos made up 19 percent of new HIV cases in the United States between 2001 and 2004 (CDC 2005), though they represented about 13 percent of the U.S. population during this time period (U.S. Census Bureau, 2005). Latino gay men (LGM) have been shown to be twice as likely to be infected with HIV as White gay men (Valleroy et al. 2000). Historically, studies have suggested that LGM engage in UAI—the primary way through which HIV is transmitted among gay men—more frequently than Caucasian, African–American and Asian & Pacific Islander gay men (Doll et al. 1991; Lemp et al. 1994). However, recent studies suggest similar rates of UAI across racial and ethnic groups in the U.S. (Millett et al. 2006).

Research conducted by Díaz (1998, 1999) revealed that LGM engage in UAI in spite of the fact that many have high levels of HIV/AIDS knowledge and strong intentions

---

P. A. Wilson (✉)  
Department of Sociomedical Sciences, Mailman School of  
Public Health, Columbia University, 722 West 168th Street,  
New York, NY 10032, USA  
e-mail: pw2219@columbia.edu

R. M. Díaz  
César Chávez Institute, San Francisco State University,  
San Francisco, CA, USA

H. Yoshikawa  
Graduate School of Education, Harvard University,  
Cambridge, MA, USA

P. E. Shrout  
Department of Psychology, New York University,  
New York, NY, USA

to engage in safer sex behaviors. How can we explain this discrepancy? Studies have suggested that individual-level models of sexual risk behavior that focus on factors such as knowledge and intentions do not successfully explain risk behavior in ethnic minority populations (Cochran and Mays 1993; Díaz 2000). Instead, there is a burgeoning interest among researchers to focus on the socio-cultural and structural factors linked to sexual risk-taking among ethnic minorities. For example, in a landmark study conducted by Díaz and Ayala (2001), experiences of social discrimination (i.e., racism, homophobia, and anti-immigrant discrimination) were shown to be positively associated with unprotected anal intercourse (UAI) among LGM. Similarly, researchers have identified the cultural factors of *familismo* (i.e., the importance of the family as a social unit and source of support), *simpatía* (i.e., the importance of polite social relations that shun assertiveness, negative responses, and criticism) and the related concept of sexual silence, and *machismo* (i.e., the importance of masculine behaviors characterized by the need for penetrative sexual intercourse, perceptions of low sexual control, and the use of the sex as a way to prove masculinity) as integral to understanding LGM's HIV risk behavior (Díaz 1998, 1999, 2000; Ibanez et al. 2005; Jarama et al. 2005; Marín and Gómez 1994).

To fully understand sexual risk behavior among LGM, it is important that researchers examine the factors linked to situations that promote sexual risk-taking in addition to the extra-personal (i.e., socio-cultural and structural) factors. For example, Díaz Ayala and Bein (2004) sought to examine how experiences of social discrimination produce a higher risk for HIV among LGM. Their findings suggested that participation in difficult sexual situations mediated the relationship between social discrimination and sexual risk behavior. Participation in difficult sexual situations was assessed using a 10-item measure that included frequency of sex under the influence of drugs, sex with partners who refuse to condoms, sex to escape negative emotions, and several other types of difficult sexual scenarios experienced in the last year. Likewise, a focus group study of roughly 400 LGM found that a loss of control (i.e., over decisions to use condoms) in sexual situations due to the use of drugs, *machista* beliefs, and heightened levels of physical attraction and/or arousal was linked to UAI (Díaz and Ayala 1999). Men in the study noted that condom used was perceived as a barrier to achieving emotional closeness and intimacy with sex partners and that discussion with sex partners about condom use were difficult to have in certain sexual situations. Other studies of LGM have reported similar findings (e.g., Carballo-Diéguez and Dolezal 1996; Jarama et al. 2005).

Although research has demonstrated the importance of examining situation-level factors in predicting sexual risk

behavior among LGM, very little work has focused on identifying specific situational factors that are related to episodes of UAI among these men. Socio-cultural and structural factors, while important to understanding sexual risk-taking behavior, can be considered to be temporally *distal* to risk-taking. Situational risk factors, on the other hand, can be considered to be temporally *proximal* to sexual risk-taking behavior. Thus, taking a conceptual and analytical approach that aims to describe situational factors related to episodes of sexual risk behavior may help to inform interventions seeking to prevent UAI and HIV risk among LGM.

#### Situational Factors Linked to Risk Behavior

Drug use is widely believed to be associated with episodes of UAI among Latino men (Díaz and Ayala 1999; Díaz et al. 2004). Prior to or during sex, it has been hypothesized to be a key potential situation-level factor for explaining UAI among gay men (Leigh and Stall 1993; Stall et al. 2000; Stall and Purcell 2000). Quantitative and qualitative studies conducted with samples of LGM demonstrate that drug use and UAI are linked for many of these men (Dolezal et al. 2000; Mansergh et al. 2002; Stueve et al. 2002). However, there has been scant research examining the association of drug use by a sex partner and sexual risk behavior. Drug use during sex may occur as an individual- or dyad-/group-level behavior (Klee et al. 1990). Thus, to fully describe how drug use may be linked to episodes of sexual risk-taking among LGM, it is important to examine the behaviors of both men and their sex partners.

Other situation-level factors that have been posited to be related to instances of UAI among LGM include: (1) heightened levels of physical and emotional attraction (Carballo-Diéguez and Dolezal 1996; Díaz and Ayala 1999); (2) the relationship status of a sex partner (i.e., boyfriend, regular partner vs. casual/anonymous sex partner) (Díaz 1998; Díaz et al. 1996); (3) the HIV status of a sex partner (Carballo-Diéguez et al. 1997), and (4) communication about condom use (Carballo-Diéguez and Dolezal 1996). Other than drug use by self and communication about condom use, none of these factors have been examined quantitatively at the situation-level of analysis.

#### Methodologies Used to Identify Risk Factors

The overwhelming majority of research aimed at identifying the factors associated with sexual risk behaviors has been at the person-level of analysis. However, situation-level studies can be more powerful in identifying HIV transmission risk factors compared to person-level studies (Catania et al. 1990; Kalichman and Weinhardt 2001; Leigh and Stall 1993; Schroder et al. 2003), though they

are seldom used in behavioral research examining risk factors linked to UAI. Situation-level studies are often conducted through *event analysis*, which is “a ‘critical incident’ technique in which respondents are asked a number of questions about a specific sexual incident” (Leigh and Stall 1993, p. 1037). Event analysis occurs at the situation-level of analysis—information is gathered on the occurrence of safe and unsafe sexual episodes and on whether or not a particular situational factor (e.g., drug use by self) was present during the event. By gathering information on behaviors and/or features that were or were not present in particular sexual encounters, researchers using this methodology can better identify associations and the situation-level of analysis. Furthermore, when study participants provide information on both safe and unsafe encounters, it is possible to conduct a within-subjects analysis comparing safe and unsafe episodes on key situation-level variables. Because the within-subject design can control for most observed and unobserved individual-level confounds, this method allows for stronger causal inference in associations between situational factors and episodes of UAI.

The study presented here moves the research literature on HIV risk behavior among LGM forward by aiming to describe the situational risk factors that are positively associated with UAI. Specifically, the study aims to describe how episodes of UAI among LGM differ from their episodes of protected anal intercourse (PAI) with regard to: self drug use and drug use by sex partners, heightened levels of attraction, partner characteristics, and communication about condom use. These situational factors are considered within the context of general Latino cultural practices and beliefs.

## Methods

### Participants

The data used in this study were obtained through the *Nuestras Voces Latino Gay Men’s Study* (Díaz et al. 2001). Between October 1998 and March 1999 a time-location probability sample of 912 men was drawn from men entering social venues (bars, clubs, and weeknight events primarily attended by Latinos and gay men) in the cities of New York ( $n = 309$ ), Miami ( $n = 302$ ), and Los Angeles ( $n = 301$ ) (for a detailed description of sampling procedures used, see Díaz et al. 2001). Eligibility criteria for inclusion in the study included: (1) Latino ethnicity, (2) city resident, (3) male non-heterosexual and (4) first visit to the venue that week. Eligible men who agreed to be interviewed completed a survey consisting of a battery of demographic, psychosocial, and behavioral measures. Men were given the

option of an interview in English or Spanish. Data from a sub-sample of 270 men who reported using condoms either “most of the time” or “sometimes” during anal intercourse in the prior twelve months and who therefore completed episode-level measures on last UAI and PAI (described in the measures section) are used in this study. Data from men who reported “always” or “never” using condoms in the past 12 months are not examined in this study. Latino men in the sub-sample represented 35% of the 786 men who had anal intercourse in the last year (55% reported “always” using condoms and 10% reported “never” using condoms).

The 270 men in the sub-sample were similar to participants to the full sample with regard to demographic characteristics. The mean age of participants in the sub-sample was 30 (range: 18–61 years). The majority (72%) reported a weekly net income of \$500 or less (i.e.,  $\leq$ \$26,000/year). Ninety-three percent had at least a high school diploma, while 21% had a college degree. The majority (65%) of the men’s in the sub-sample were born outside the U.S. and represented various ethnicities including Mexican (35%), South American (30%), Cuban (16%), and Puerto Rican (13%). Half (50%) of the men completed the interview in Spanish. Lastly, the majority (82%) identified as gay.

### Measures

Measures used in this study collect information on situational factors measured at the episode-level. Participants were asked identical sets of questions with regard to their last episode of anal intercourse in which they used condoms and the last episode in which they did not use condoms. The episode-level measures were all dichotomous—they assessed whether a feature was present or not present during an episode. For some items (i.e., physical and emotional attraction), ordinal variables were transformed to dichotomous variables. The loss of variance that resulted in these transformations was minimal, as participants most frequently responded at the extremes of the distributions.

Episode-level measures included items for each of the factors highlighted previously. **Drug use:** Participants were asked “did you use drugs?” and “was your partner ‘high’ on drugs?” Response options included “yes,” “no” and “don’t know.” “Yes” and “no” responses were contrasted; “don’t know” was not endorsed by any respondent. Use of specific types of drugs was not asked. **Attraction:** To assess strong physical attraction participants were asked, “In the sexual encounter, how strong was your attraction to your partner?” The response option “very strong” was contrasted with the combined “somewhat strong,” “somewhat weak,” and “very weak” options. In assessing strong emotional closeness, participants were asked “in this sexual encounter, did

you feel emotionally close to the other person?” As with physical attraction, the response option “definitely yes” was contrasted with the combined “somewhat yes,” “somewhat no,” and “definitely no” options. **Partner characteristics:** Items for partner characteristics included, “did you know your partner’s HIV status?” and “what was your relationship to your partner?” Response options to the partner relationship status question included “boyfriend/regular sex partner” and “one-night stand/anonymous.” Using these options, we created a dichotomous dummy variable to indicate the type of sex partner involved in the episode. **Communication about condom use:** The question, “were condoms discussed prior to or during the sexual encounter?” was used to measure communication about condom use. Response options included “yes,” “no” and “don’t know”. As with the drug use items, “yes” and “no” responses were contrasted; “don’t know” was not endorsed.

### Data Analyses

This study employed a within-subjects design, which allows for stronger causal inference regarding the direction of the relationship between situational factors and overall risky sexual behavior. To take into account the fact that the same persons reported on episodes of UAI and PAI we used the conditional logistic regression (e.g., Hosmer and Lemeshow 2000). Conditional logistic regression (CLR) allows for the examination of data with paired outcomes (i.e., two observations per participant) on dichotomous measures and can be considered to be a generalization of the well known McNemar approach to paired binary data (McNemar 1947). The approach recognizes that the information in the paired responses depends on the discrepancy cells, rather than the concordant cells. For example, if a participant reports that both they and their partner used drugs in UAI and PAI episodes, then the respondent’s case is not informative about the differential impact of the [drug use] situation on condom use. Similarly, if the participant reports that both partners avoided using drugs in both episodes, the case is not informative. However, if a participant reports having a partner who uses drugs in one episode and having a partner who do not use drugs in the other episode, then there is information about this case regarding whether this within-person variation is linked to partner drug use.

CLR allows the underlying risk association to be studied in the context of a multivariate model. Because CLR adjusts for uninformative selection factors, it allows for greater causal inference in understanding the role of situational factors in predicting participants’ sexual risk episodes. The approach has been used in other studies examining situational risk factors among MSM (e.g., Colfax et al. 2004a, b).

We implemented the CLR using PROC LOGISTIC in SAS using the approach described by Hosmer and Lemeshow (2000). This approach requires the analyst to compute difference values on situational risk variables to identify persons who are discrepant across PAI and UAI episodes. These variables were created by subtracting the values for situational factors measured in the PAI episode from the values for matching measures in the UAI episode. Because the situational variables were dichotomous (or transformed to dichotomous), difference variables had values of either  $-1$  (i.e., indicating that the situational factor was present in the protected episode but not the unprotected one),  $0$  (i.e., indicating no difference between episodes), or  $1$  (i.e., indicating that the situational factor was present in the UAI episode). Each difference variable was examined in a univariate model using the CLR procedure. All variables that were significantly associated with UAI episodes in univariate analyses ( $P \leq .10$ ) were included in a multivariate model, to assess which situational factors predicted UAI independent of other factors. In all analyses Wald chi-square statistics were used to assess the statistical significance of obtained estimates, and odds ratios and 95% confidence intervals were calculated.

### Results

Frequencies for the difference variables used in the CLR are presented in Table 1. The proportions of men who reported that a situational factor was present in their episode of PAI, in their episode of UAI, in both episodes, and in neither episode are displayed in the table. As shown in the table, participants reported that drug use by self, sex partner, or both was not present in either their UAI or PAI episodes 73, 53, and 76% of the time, respectively. However, drug use by a sex partner was reported in 18% of UAI episodes, compared to drug use by self and drug use by both partners being reported in 7 and 8% in UAI episodes, respectively. A majority of participants reported feeling heightened levels of physical attraction (43%) and emotional attraction (39%) in both their UAI and PAI episodes, while 21% reported heightened physical attraction in UAI episodes only, and 20% reported heightened emotional attraction during UAI episodes only. The majority (60%) of participants reported having a boyfriend/regular sex partner for both UAI and PAI episodes. Forty-two percent of participants reported knowing their sex partner’s HIV status in both their UAI and PAI episodes, while 34% indicated that they did not know their partner’s HIV status in either episode. Finally, 38% men reported having discussions about condom use with sex partners most frequently in both UAI and PAI episodes, while 27%

**Table 1** Difference variable frequencies (*n* = 270)

	Percentage ( <i>n</i> )			
	Present in PAI episode	Present in UAI episode	Present in both episodes	Present in neither episode
Drug use by self	6% (16)	7% (20)	13% (36)	73% (198)
Drug use by sex partner	11% (29)	18% (49)	19% (50)	53% (142)
Drug use by self and sex partner	6% (16)	8% (21)	10% (27)	76% (206)
Heightened phys. attraction	13% (36)	21% (56)	43% (116)	23% (62)
Heightened emot. attraction	12% (32)	20% (53)	39% (104)	30% (81)
Known HIV status	10% (26)	15% (40)	42% (113)	34% (91)
Boyfriend/regular partner	8% (22)	18% (49)	60% (163)	13% (36)
Condom discussions	27% (74)	9% (24)	38% (103)	26% (69)

reported them during PAI episodes only, 26% in neither episode, and 9% during UAI episodes only.

**Univariate Findings**

The findings from the univariate analyses are presented in Table 2. Drug use by a sex partner emerged as a significant predictor of UAI (95% CI: 1.07–2.67). The odds ratio (OR) of 1.69 indicated that when men had UAI they were almost two times as likely to report that their sex partner was high on drugs during the episode when compared to their last PAI episode.

Both physical attraction and emotional closeness were significant predictors of UAI episodes. When men in the sample had UAI, they were more likely to indicate strong levels of physical attraction and emotional closeness toward their sex partner compared to when they had protected sex (OR = 1.56; 95% CI: 1:02–2.36, and OR = 1.66; 95% CI: 1:07–2.57, respectively).

**Table 2** Univariate findings from conditional logistic regressions predicting unprotected episodes using difference variables (*n* = 270)

	B (S.E.)	O.R.	95% CI
<b>Drug use</b>			
Drug use by self	0.22 (0.34)	1.25	0.65–2.41
Drug use by sex partner	0.52 (0.23)*	1.69	1.07–2.67
Drug use by self and sex partner	0.27 (0.33)	1.31	0.69–2.51
<b>High levels of attraction</b>			
Heightened physical attraction	0.44 (0.21)*	1.56	1.02–2.36
Heightened emotional attraction	0.50 (0.22)*	1.66	1.07–2.57
<b>Partner characteristics</b>			
Known HIV status	0.43 (0.25) <sup>a</sup>	1.54	0.94–2.52
Boyfriend/regular partner	0.80 (0.26)**	2.23	1.35–3.68
<b>Discussions about condoms</b>			
Condom discussions	–1.13 (0.23)**	0.32	0.21–0.51

\* < .05, \*\* < .01, <sup>a</sup> < .10

Two of the three situational factors tied to partner characteristics were significantly associated with UAI episodes. Men in the sample were also more likely to specify that a boyfriend or regular partner was their sex partner in UAI episodes compared to PAI episodes (OR = 2.23; 95% CI: 1.35–3.68). Lastly, condom discussions emerged as a significant variable that was inversely related to episodes of UAI (OR = 0.32; 95% CI: 0.21–0.51). The odds ratio of 0.32 indicated that when men in the sample discussed condoms with sex partners prior to or during episodes, they were approximately three times (i.e., inverted OR = 3.13) less likely to have an UAI episode compared to when they had a PAI episode.

**Multivariate Findings**

The findings from the multivariate analysis are presented in Table 3. The multivariate model was significant ( $\chi^2$  (6, *N* = 270) = 33.57, *P* < .01), accounting for 20% variance. Drug use by a sex partner and condom discussions both significantly predicted UAI episodes independent of each other and the other episode-level variables that emerged as significant in the univariate analyses. As in the univariate analysis, men in the sample were about two times more likely to report that their sex partner was high on drugs during their last unprotected episode compared to their last protected episode (OR = 1.82; 95% CI: 1.10–3.03).

**Table 3** Multivariate findings from conditional logistic regressions predicting unprotected episodes using difference variables (*n* = 270)

	B (S.E.)	O.R.	95% CI
Drug use by sex partner	0.60 (0.26)*	1.82	1.10–3.03
Heightened physical attraction	0.40 (0.25)	1.49	0.91–2.46
Heightened emotional attraction	0.16 (0.27)	1.17	0.68–2.00
Known HIV status	0.23 (0.31)	1.26	0.69–2.29
Boyfriend/regular partner	0.44 (0.32)	1.55	0.83–2.89
Condom discussions	–1.15 (0.25)**	0.32	0.19–0.52

\* < .05, \*\* < .01

Likewise, the condom discussion variable had the same relationship to unprotected episodes observed in the univariate findings—discussions about condoms were more than three times less likely to occur during unprotected episodes compared to protected episodes ( $OR = 0.32$ ; 95% CI: 0.19–0.52).

## Discussion

This study is among the first to employ a within-subjects analysis to examine the relationship between situational factors and unprotected sexual behavior among LGM. The results of this study revealed that a variety of situational factors were related to episodes of UAI among LGM, including drug use by a sex partner, communication about condoms, heightened levels of attraction towards a sex partner, and characteristics of a sex partner (i.e., relationship type).

### How are Latino Gay men's Episodes of UAI Different From their episodes of PAI With Regard to Drug Use By Self and Sex Partners?

Findings obtained in person-level studies that show a significant, positive relationship between drug use and unprotected sex do not hold true, at least in part, for the current study. Specifically, drug use by self did not predict episodes of UAI in this study. However, drug use by a sex partner was a significant predictor of unprotected episodes. In both univariate and multivariate models, unprotected episodes were significantly more likely to involve drug use by a sex partner than protected episodes. Drug use by a sex partner did not appear to be confounded with drug use by self. As indicated in Table 2, drug use by self and drug use by a sex partner did not always co-occur during the sexual encounters of the LGM in the sample. The findings here suggest that episodes were more likely to involve UAI when sex partners were under the influence of drugs regardless of whether study participants were also under the influence.

Efficacy to engage in HIV risk reduction may be one factor that is important to consider in understanding how a sex partner's drug use is related to UAI among the LGM in this study. Though often misunderstood as a person-level characteristic that is stable across contexts, self-efficacy fluctuates based on features of social contexts (Bandura 1994). Awareness of a partner's intoxication during a sexual encounter could decrease levels of efficacy to use condoms among LGM, whether or not they are also using drugs, for two major reasons.

First, many people perceive drugs and alcohol use as disinhibiting. Drug use by a partner may represent not just

an excuse, but a cause, for unprotected sex by providing a "time out" from norms used to guide behavior (Critchlow 1986; McKirnan et al. 1996, Stall and Purcell 2000). Similarly, drug use that occurs during sex can energize sexual contexts in such a way that they become ideal for "play," or the experience of sex as recreational and/or devoid of health risk (Díaz 1998, 1999). Drug use, or more specifically, the awareness of drug use by a sexual actor or actors, excites a sexual situation and creates a heightened experience for all involved in the situation. Thus, the disinhibition that results from drug use during sex cannot be considered solely a chemical reaction that affects the user, but also a social reaction that affects the partner of the user who is aware of his drug use.

Second, though there is a burgeoning interest in socio-cultural and structural factors involved in LGM's heightened risk for HIV, most research has overlooked how cultural factors such as *simpatía* and the related concept of sexual silence may reduce efficacy and enhance risk during sexual encounters in which sex partners use drugs. During these moments, *simpatía* and sexual silence may affect LGM in such a way that they resist condom use for fear of disrupting moment, losing intimacy, or possibly being rejected by their partner (Díaz 1998, 2000). Studies have suggested that many of LGM perceive condoms as barriers to intimacy, uncomfortable, difficult to discuss with partners, and physically numbing (Carballo-Diéguez and Dolezal 1996; Díaz and Ayala 1999). These perceptions may be heightened during sexual encounters with partners who are high on drugs. Also, their effects are situated *proximal* to a sexual encounter (i.e., negative sensations, difficult discussions, etc. are experienced during the encounter); conversely, the effects of not using condoms, though potentially more serious (i.e., contracting a sexually transmitted infection, such as HIV), are situated *distally* and may be easier to respond to after a sexual encounter.

### How do Unprotected and Protected Episodes Differ with Regard to Three Categories of Situational Factors?

Communication about condom use emerged as an important and significant situational factor in negatively predicting episodes of UAI. Both univariate and multivariate analyses suggested that sexual encounters were three times less likely to be unprotected (and more likely to be protected) when participants discussed condom use prior to or during the encounter. Unlike drug use by a sexual partner, the finding that condom discussions predicted protected episodes is neither surprising nor novel. However, more research is needed to explore the content and timing of protective discussions about condom use among LGM. Likewise, more information is needed on why these discussions may fail to happen when LGM engage in

sexual behavior. Socio-cultural factors (e.g., *simpatía* and sexual silence) and/or structural factors (e.g., poverty, social discrimination) may be related to a lowered likelihood of having discussions about safer sex (Díaz 2000). A lack of discussions about condom use during sexual episodes may epitomize the “difficult sexual situations” Díaz Ayala and Bein (2004) posited to mediate social discrimination and heightened HIV risk among LGM. While this study is not able to ascertain this, it does suggest that condom discussions, considered at the most general level, are protective against HIV risk. Future work should examine how situational factors such as engaging in discussions about condom use with sex partners are related to socio-cultural and structural factors that have been tied to HIV risk in previous studies.

The univariate analyses also revealed that episodes of unprotected sex were more likely to occur when men experienced high levels of physical and emotional attraction toward their sex partners. Studies of ethnic minority gay men suggest that some of these men may find it difficult to use condoms with partners whom they find highly desirable or who represent a physical ideal (Díaz and Ayala 1999; Wilson and Yoshikawa 2004). Similarly, for many LGM, a high degree of emotional closeness or connection, or the perception of such a connection, outweighs the importance of using condoms (Carballo-Diéguez and Dolezal 1996; Díaz and Ayala 1999). Also, having a boyfriend or regular sex partner was positively related to UAI. Studies have shown that ethnic minority gay men are more likely to have unprotected sex with partners that they are familiar with, on either a romantic or interpersonal level (Díaz et al. 1996; Yoshikawa et al. 2004).

Not all of the findings obtained in the univariate analyses were shown to be significantly related to UAI in multivariate analyses. This suggests that the effects of the situational factors that were not significant in multivariate analyses but that were in univariate analyses (i.e., heightened emotional attraction, partner relationship status, and partner HIV status) were either accounted for by the effects of drug use by a sex partner and/or condom use discussions, or share variance with other stronger (and thereby significant) factors. Nonetheless, the findings from the univariate analyses are important to consider, as these analyses held constant person-level attributes that could obscure the interpretation of bivariate correlations obtained in other types studies.

#### Limitations and Contributions of the Study

This study examined situational risk factors predicting UAI among LGM using an episode-level approach. There are weaknesses to this approach, and the way it was implemented in this study. First, the retrospective design of the

study represents a shortcoming. Participants were asked to recall episodes that could have taken place any time in the prior 12 months. Thus, there may have been differential recall of episodes by participants depending on when the episode occurred relative to their interview date. Future studies should use methods that enable more frequent assessments of behavior, such as structured diary methodologies (e.g., Wilson et al. *in press*). Second, participants' reports of their own and their partner's drug use in sexual encounters could be subject to measurement error, and error may have been related to social desirability and/or the type of drugs used by participants and their partners. Third, while this study does account for all stable person-level variables in analyses, it does not and cannot account for all the episode-level variables that may explain unprotected sex, or that may alter the relationships between situational factors and UAI observed in study. The multivariate model we examined explained 20% of the variance in unprotected episodes. While the proportion of variance explained is similar to what has been obtained in other studies examining UAI among LGM (e.g., Díaz et al. 2004; Díaz 2006; Jarama et al. 2005), more research is needed on other potential features of sexual encounters that predict UAI. Situational factors such as use of specific types of drugs (e.g., methamphetamine, amyl nitrite, etc.) during sex, demographic characteristics of sex partners, and setting features may be important to examine in relation to UAI episodes. Likewise, research focusing on distal risk factors (i.e., personal, socio-cultural, and structural factors) that may be related to the situational factors examined here may add to the explanation of variance in unprotected episodes. Finally, the findings need to be interpreted within the context of the study sample. The data were collected between 1998 and 1999, and the sexual and substance-use behaviors of Latino gay men may have changed over the past decade, notably with regard to the increased use of methamphetamine in recent years (Díaz et al. 2005). Likewise, the sample was of modest size and consisted of fairly well-educated men who were recruited in social venues in three major U.S. cities. Thus, the sample is not representative of all LGM living and working in the U.S.

In spite of these limitations, this research examined situational associations to UAI episodes that cannot be looked at in traditional studies conducted at the person-level of analysis. The study showed that the same factors that may differentiate safe and unsafe persons or groups do not necessarily differentiate safe and unsafe sexual episodes. Person-level studies may not tell the full story with regard to the relationship between drug use and UAI. For example, as the findings suggest, engaging in sexual behavior with a partner who is using drugs may be at the core of the relationship between drug use and unprotected sex among LGM.

Another way that this study contributes to existing research examining HIV risk among gay men is through its focus solely on only men who use condoms with some variability. The men in the sample used in this study indicated using condoms “sometimes” or “most of the time;” those who use condoms “always” or “never” were not included in the sample. While LGM who “always” and “never” use condoms remain crucial populations for HIV prevention, different prevention approaches may be required for those who engage in both protected and unprotected episodes. In addition, examining sexual risk as the frequency of unprotected anal intercourse may result in analyses that, though aiming to identify factors associated with risky sex, actually identify factors associated with risky persons. These types of analyses may actually be identifying factors linked to men who always or never use condoms. By excluding these groups from the study and examining episodes of safe and unsafe sex within LGM who use condoms with variability, we were able to isolate factors predicting risky episodes within this important group.

#### Implications for Future Research and Intervention

There are several implications for research and intervention that can be gleaned from this study. First, researchers interested in examining the relationship between drug use and risky sexual behavior among LGM should examine drug use behavior separately for each partner in a sexual episode. More research is needed to explain how a sex partner’s use of drugs prior to or during an episode may affect the kind of sexual behaviors and level of risk LGM engage in during the episode. Likewise, the findings suggest that future research on characteristics of LGM’s sex partners, and their possible relationships to risk behavior, is warranted. The presence of certain sex partner characteristics (e.g., race/ethnicity, socioeconomic status, masculinity, etc.) may be related to the situational risk factors (e.g., self and partner drug use, communication with sex partners) identified in this study and episodes of UAI among LGM. Second, public health interventions would serve LGM well by promoting discussions about condoms with all of their sexual partners before they have sex with them. This study showed that the discussion of condom use with sex partners was a powerful predictor of protected sex, indicating that these discussions may constitute a very important protective factor against HIV risk. Individual-, group-, and community-level interventions should be developed to combat sexual silence among LGM and promote open communication with sexual partners. Finally, interventions should focus on reducing the impact that drug use by LGM or their sex partners has on UAI and safer sex negotiation. A harm-reduction intervention that focuses on promoting condom efficacy in sexual

episodes involving drug use could be extremely useful for many Latino gay men.

**Acknowledgments** This research was supported by grants R01-HD32776 (awarded to Rafael M. Díaz, Ph.D.) from the National Institute of Child Health and Human Development, and T32-MH19890 (awarded to Patrick Shrout, Ph.D. and supporting Patrick A. Wilson, Ph.D.) from the National Institute of Mental Health.

#### References

- Bandura, A. (1994). Social cognitive theory and exercise of control over HIV infection. In R. J. DiClemente & J. L. Peterson (Eds.), *Preventing AIDS: Theories and methods of behavioral interventions* (pp. 25–59). New York: Plenum.
- Carballo-Dieiguez, A., & Dolezal, C. (1996). HIV risk behaviors and obstacles to condom use among Puerto Rican men in New York City who have sex with men. *American Journal of Public Health, 86*, 1619–1622.
- Carballo-Dieiguez, A., Remien, R. H., Dolezal, C., & Wagner, G. (1997). Unsafe sex in the primary relationships of Puerto Rican men who have sex with men. *AIDS and Behavior, 1*, 9–17. doi: [10.1023/A:1026257620055](https://doi.org/10.1023/A:1026257620055).
- Catania, J. A., Gibson, D. R., Chitwood, D. D., & Coates, T. J. (1990). Methodological problems in AIDS behavioral research: Influences on measurement error and participation bias in studies of sexual behavior. *Psychological Bulletin, 108*, 339–362. doi: [10.1037/0033-2909.108.3.339](https://doi.org/10.1037/0033-2909.108.3.339).
- Centers for Disease Control, Prevention. (2005). Trends in HIV/AIDS diagnoses—33 states, 2001–2004. *Morbidity and Mortality Weekly Report, 54*, 1149–1153.
- Cochran, S. D., & Mays, V. M. (1993). Applying social psychological models to predicting HIV-related sexual risk behaviors among African Americans. *The Journal of Black Psychology, 19*, 142–154. doi: [10.1177/00957984930192005](https://doi.org/10.1177/00957984930192005).
- Colfax, G., Coates, T. J., Husnik, M. J., Huang, Y., Buchbinder, S., Koblin, B., et al. (2004a). Longitudinal patterns of methamphetamine, popper (amyl nitrite), and cocaine use and high-risk sexual behavior among a cohort of San Francisco men who have sex with men. *Journal of Urban Health, 82*(suppl. 1), i62–i70. doi: [10.1093/jurban/jti025](https://doi.org/10.1093/jurban/jti025).
- Colfax, G., Coates, T. J., Husnik, M. J., McKirnan, D., Buchbinder, S., Koblin, B., et al. (2004b). Substance use and sexual risk: A participant- and episode-level analysis among a cohort of men who have sex with men. *American Journal of Epidemiology, 159*, 1002–1013. doi: [10.1093/aje/kwh135](https://doi.org/10.1093/aje/kwh135).
- Critchlow, B. (1986). The powers of John Barleycorn: Beliefs about the effects of alcohol on social behavior. *The American Psychologist, 41*, 751–764. doi: [10.1037/0003-066X.41.7.751](https://doi.org/10.1037/0003-066X.41.7.751).
- Díaz, R. M. (1998). *Latino gay men and HIV: Culture, sexuality, & risk behavior*. New York: Routledge.
- Díaz, R. M. (1999). Trips to Fantasy Island: Contexts of risky sex for San Francisco gay men. *Sexualities, 2*, 89–112. doi: [10.1177/136346099002001005](https://doi.org/10.1177/136346099002001005).
- Díaz, R. (2000). Cultural regulation, self-regulation, and sexual: A psycho-cultural model of HIV risk in Latino gay men. In R. Parker, R. M. Barbosa & P. Aggleton (Eds.), *Framing the sexual subject: The politics of gender, sexuality, & power* (pp. 191–215). Los Angeles, CA: University of California Press.
- Díaz, R. (2006). In our own backyard: HIV/AIDS stigmatization in the Latino gay community. In N. Teunis & G. Herdt (Eds.), *Sexual inequalities and social justice* (pp. 50–65). Berkeley, CA: University of California Press.



- Díaz, R. M., & Ayala, G. (1999). Love, passion, and rebellion: Ideologies of HIV risk among Latino gay men in the USA. *Culture, Health & Sexuality, 1*, 277–293. doi:10.1080/136910599301021.
- Díaz, R. M., & Ayala, G. (2001). *Social discrimination and health: The case of Latino gay men and HIV risk*. NY: Policy Institute of the National Gay and Lesbian Task Force.
- Díaz, R. M., Ayala, G., & Bein, E. (2004). Sexual risk as an outcome of social oppression: Data from a probability sample of Latino gay men in three U.S. cities. *Cultural Diversity & Ethnic Minority Psychology, 10*, 255–267. doi:10.1037/1099-9809.10.3.255.
- Díaz, R. M., Ayala, G., Bein, E., Henne, J., & Marin, B. V. (2001). The impact of homophobia, poverty and racism on the mental health of gay and bisexual Latino Men: Findings from 3 U.S. cities. *American Journal of Public Health, 91*, 927–932.
- Díaz, R. M., Heckert, A. L., & Sánchez, J. (2005). Reasons for stimulant use among Latino gay men in San Francisco: A comparison between methamphetamine and cocaine users. *Journal of Urban Health, 82*(suppl. 1), i71–i78. doi:10.1093/jurban/jti026.
- Díaz, R. M., Stall, R. D., Hoff, C., Daigle, D., & Coates, T. J. (1996). HIV risk among Latino gay men in the Southwestern United States. *AIDS Education and Prevention, 8*, 415–429.
- Dolezal, C., Carballo-Dieglez, A., Nieves-Rosa, L., & Díaz, F. (2000). Substance use and sexual risk behavior: Understanding their association among four ethnic groups of Latino men who have sex with men. *Journal of Substance Abuse, 11*, 323–336. doi:10.1016/S0899-3289(00)00030-4.
- Doll, L. S., Byers, R. H., Bolan, G., Douglas, J. M., Moss, P. M., Weller, P. D., et al. (1991). Homosexual men who engage in high risk behavior: A multicenter comparison. *Sexually Transmitted Diseases, 18*, 170–175. doi:10.1097/00007435-199107000-00009.
- Hosmer, D. W., & Lemeshow, S. (2000). *Applied Logistic Regression*. New York: Wiley.
- Ibanez, G. E., Marin, B. V., Villareal, C., & Gomez, C. G. (2005). Condom use at last sex among unmarried Latino men: An event level analysis. *AIDS and Behavior, 9*, 433–441. doi:10.1007/s10461-005-9015-0.
- Jarama, S. L., Kennamer, J. D., Poppen, P. J., Hendricks, M., & Bradford, J. (2005). Psychosocial, behavioral, and cultural predictors of sexual risk for HIV infection among Latino men who have sex with men. *AIDS and Behavior, 9*, 513–523. doi:10.1007/s10461-005-9022-1.
- Kalichman, S. C., & Weinhardt, L. S. (2001). Negative affect and sexual risk behavior: Editorial comment. *Health Psychology, 4*, 300–301. doi:10.1037/0278-6133.20.4.300.
- Klee, H., Faugier, J., Hayes, C., Boulton, T., & Morris, J. (1990). Sexual partner of injecting drug users: The risk of HIV infection. *British Journal of Addiction, 85*, 413–418. doi:10.1111/j.1360-0443.1990.tb00658.x.
- Leigh, B. C., & Stall, R. (1993). Substance use and risky sexual behavior for exposure to HIV: Issues in methodology, interpretation, and prevention. *The American Psychologist, 48*, 1035–1045. doi:10.1037/0003-066X.48.10.1035.
- Lemp, G. F., Hirozawa, A. M., Givertz, D., Nieri, G. N., Anderson, L., Lindergren, M., et al. (1994). Seroprevalence of HIV and risk behaviors among young homosexual and bisexual men: The San Francisco/Berkeley young men's survey. *Journal of the American Medical Association, 272*, 449–454. doi:10.1001/jama.272.6.449.
- Mansergh, G., Marks, G., Colfax, G. N., Guzman, R., Rader, M., & Buchbinder, S. (2002). 'Barebacking' in a diverse sample of men who have sex with men. *AIDS (London, England), 16*, 653–659. doi:10.1097/00002030-200203080-00018.
- Marín, B. V., & Gómez, C. A. (1994). Latinos, HIV disease, and culture: Strategies for HIV prevention. In P. T. Cohen, M. A. Sande & P. A. Volberding (Eds.), *The AIDS Knowledge Base* (pp. 10–13). Philadelphia: J. B. Lippincott.
- McKirnan, D. J., Ostrow, D. G., & Hope, B. (1996). Sex, drugs and escape: A psychological model of HIV-risk sexual behaviors. *AIDS Care, 8*, 655–669. doi:10.1080/09540129650125371.
- McNemar, Q. (1947). Note on the sampling error of the difference between correlated proportions or percentages. *Psychometrika, 12*, 153–157. doi:10.1007/BF02295996.
- Millett, G. A., Peterson, J. L., Wolitski, R. J., & Stall, R. (2006). Greater risk for HIV infection of Black men who have sex with men: a critical literature review. *American Journal of Public Health, 96*, 1007–1019. doi:10.2105/AJPH.2005.066720.
- Schroder, K. E. E., Carey, M. P., & Venable, P. A. (2003). Methodological challenges in research on sexual risk behavior: II. Accuracy of self-reports. *Annals of Behavioral Medicine, 26*, 104–123. doi:10.1207/S15324796ABM2602\_03.
- Stall, R. D., Hays, R. B., Waldo, C. R., Ekstrand, & McFarland, W. (2000). The gay '90's: A review of research in the 1990 s on sexual behavior and HIV risk among men who have sex with men. *AIDS (London, England), 14*(suppl. 3), S101–S114. doi:10.1097/00002030-200001070-00019.
- Stall, R. D., & Purcell, D. W. (2000). Intertwining epidemics: A review of research on substance use among men who have sex with men and its connection to the AIDS epidemic. *AIDS and Behavior, 42*, 181–192. doi:10.1023/A:1009516608672.
- Stueve, A., O'Donnell, L., Duran, R., San Doval, A., & Geier, J. (2002). Being high and taking sexual risks: Findings from a multisite survey of urban young men who have sex with men. *AIDS Education and Prevention, 14*, 482–495. doi:10.1521/aeap.14.8.482.24108.
- Valleroy, L. A., MacKellar, D. A., Karon, J. M., Rosen, D. H., McFarland, W., Shehan, D. A., et al. (2000). HIV prevalence and associated risks in young men who have sex with men. *Journal of the American Medical Association, 284*, 198–204. doi:10.1001/jama.284.2.198.
- Wilson, P. A., Cook, S.H., McGaskey, J., Rowe, M., & Dennis, N. (in press). Situational predictors of sexual risk episodes among HIV-positive men who have sex with men. *Sexually Transmitted Infections*.
- Wilson, P. A., & Yoshikawa, H. (2004). Experiences of and responses to social discrimination among Asian and Pacific Islander gay men: Their relationship to HIV risk. *AIDS Education and Prevention, 16*, 68–83. doi:10.1521/aeap.16.1.68.27724.
- Yoshikawa, H., Wilson, P. A., Chae, D. H., & Cheng, J. (2004). Do family and friendship networks protect against the influence of discrimination on mental health and HIV risk among Asian and Pacific Islander gay men? *AIDS Education and Prevention, 16*, 84–100. doi:10.1521/aeap.16.1.84.27719.