



Published in final edited form as:

*AIDS Educ Prev.* 2009 April ; 21(2): 156–168. doi:10.1521/aeap.2009.21.2.156.

## Assessing motivations to engage in intentional condomless anal intercourse in HIV-risk contexts (“bareback sex”) among men who have sex with men

José A. Bauermeister, MPH, PhD, Alex Carballo-Diéguez, PhD, Ana Ventuneac, PhD, and Curtis Dolezal, PhD

### Abstract

**Background**—While condom use is an effective barrier against HIV transmission, some men who have sex with men (MSM) engage in bareback sex (unprotected anal sex in risky contexts) and increase their risk for HIV (re)infection. Understanding MSM's decision to bareback (vis-à-vis condom use) is essential to develop effective HIV/AIDS prevention programs for this population.

**Method**—An ethnically diverse sample of men who bareback (n=120) was recruited exclusively on the Internet and stratified to include two-thirds who reported both URAI and being HIV-uninfected. We use exploratory factor analysis to explore the domains within the DBB scale, and test the association between DBB and risky sexual behaviors.

**Results**—HIV-positive MSM (n=31) reported higher costs/losses associated with condom use than HIV-negative men (n=89). We found two underlying factors in the DBB scale: a Coping with Social Vulnerabilities subscale (8 items;  $\alpha = .89$ ) and a Pleasure & Emotional Connection subscale (5 items;  $\alpha = .92$ ). We found a positive association between DBB (i.e. greater gains associated with bareback sex) and URAI occasions, number of partners, and having one or more serodiscordant partners in the past 3 months.

**Conclusions**—MSM may avoid using condoms in order to cope with psychosocial vulnerabilities and create intimacy with other MSM. This population could benefit from alternatives to condoms such as pre/post exposure prophylaxis and rectal microbicides.

### Keywords

Condom use; Bareback; MSM; decision-making; scale development

### Introduction

Intentional condomless anal intercourse in HIV-risk contexts (popularly referred to as “bareback sex”) has received much attention in the popular and scientific literature (Berg, 2008; Carballo-Diéguez, Dowsett, Ventuneac, Remien, Balán, Dolezal et al., 2006; Huebner, Proescholdbell & Nemeroff, 2006; Parsons & Bimbi, 2007). Specifically, this literature has looked into the underlying factors that may motivate behavior, as they aid to create individual-level behavior change programs. Pinkerton and Abramson (1992), for instance, argued that unprotected anal intercourse may result from rational decision-making process in which benefits (e.g., pleasure, intimacy) outweigh risks (e.g., risk of infection or disease severity). In a qualitative study of men who have sex with men (MSM) who actively sought out partners online to engage in intentional condomless sex ( $N = 62$ ), Carballo-Diéguez & Bauermeister (2004) found that some MSM reported that bareback sex was more enjoyable and a personal choice, while others appeared to be more influenced by contextual factors that mitigated HIV-prevention concerns, such social isolation and perceiving that HIV-infection is inevitable.

While it is important to understand the psychosocial factors that influence MSM's decision to bareback (vis-à-vis to use condoms) in order to promote safer sex behaviors, the scientific inquiry in this area has been limited by a lack of consensus regarding the meaning of “bareback sex” among researchers (for a discussion of the conceptual differences between ‘unprotected male-to-male anal sex’ and ‘bareback sex’, see Carballo-Diéguez, Ventuneac, Bauermeister, Dowsett, Dolezal, Remien, et al., in press); the inconsistent attention to the role that intentionality and risky contexts play in differentiating this behavior from male-to-male condomless anal sex; and by the scarcity of construct-related measures with sound psychometric properties. Berg (2008), for example, found that Zagumny and Brady's (1998) AIDS Health Belief Scale, a measure assessing the main four predictors (i.e., perceived severity, perceived susceptibility, perceived benefits, and perceived barriers) of the Health Belief Model (Janz, Champion & Strecher, 2002), had poor reliability when administered to a geographically-diverse sample of barebacking MSM recruited online. Recently, Parsons and Bimbi (2007) underscored the importance of increasing theory-based approaches to the study of barebacking behavior. While several scales with good psychometric properties have been developed to assess attitudes towards unprotected anal intercourse (Shidlo, Yi & Dalit, 2005) and the benefits to bareback sex (Halkitis, Parsons & Wilton, 2003), these scales have not explored men's motivation to engage in risky sexual behavior vis-à-vis their motivation to use condoms. We present here an innovative and complementary approach to these subscales by creating a *decisional balance* scale to bareback (i.e., the net motivation to bareback even after accounting for MSM's motivation to use condoms). Originally proposed by Janis and Mann (1977), decisional balance to carry out a behavior is conceptualized as a schema that helps individuals make a decision. As its underlying assumptions, Janis & Mann (1977) argue that

“it is not the *absolute* amount of gain and loss he expects to encounter that determines the value a person will place on a given choice, but the amount relative to a *comparison level*, based on the amount of reward or punishment the person has obtained in the past or has seen other people obtaining. The more the anticipated outcome exceeds the comparison level, the more satisfying it is; the farther it is below the comparison level, the more unsatisfying.” (p.136).

Furthermore, the outcome of weighing different gains and losses of a behavior will be influenced by the utilitarian gains and losses for the individual and his significant others.

As a construct, decisional balance takes into consideration the reality of negotiating sexual encounters; that is, while men may know that condoms protect against HIV, they may have other non-HIV prevention motivations to bareback (Halkitis et al., 2003). From a research standpoint, the creation of a decisional balance scale may help us understand how MSM weigh the pros and cons of barebacking over using condoms across different situations. Additionally, it may inform HIV/STI prevention programs for MSM who engage in intentional unprotected anal intercourse in risky contexts (Prochaska, Redding & Evers, 2002). Consequently, we explore and test the psychometric properties of a decisional balance scale that considers the gains and losses of bareback sex (vis-à-vis condom use) at multiple levels: the individual-level (e.g., pleasure versus discomfort), the interpersonal-level (e.g., intimate connection to partner versus awkward condom negotiation), and societal-level (e.g., social acceptance versus sexual prejudice).

This study had four aims. First, we explored the psychometric properties of a scale to measure MSM's decisional balance to engage in bareback sex vis-à-vis condom use (DBB). Second, we compared MSM's decisional balance score by HIV status given that HIV-positive and HIV-negative men may have different motivations to engage in bareback sex (Carballo-Diéguez & Bauermeister, 2004). We then explored the association between the decisional balance to bareback and several sex risk behaviors (i.e., number of partners, number of unprotected receptive anal intercourse occasions, and having one or more serodiscordant partners). Finally,

we tested whether the magnitude of the correlations between DBB and risky sex behaviors is different for HIV-positive and HIV-negative MSM as their HIV status may lead men to have different decisional balance weights to the gains (i.e., more pleasurable) and losses (i.e., reducing risk of infection or transmission) associated with bareback sex.

## Method

### Sample and Recruitment

This report is based on data collected in a four-year, NIMH-funded study that focused on MSM who meet sexual partners through the Internet to intentionally engage in condomless anal intercourse in situations in which there is risk of HIV transmission (the “Frontiers in Prevention” study). By study design, the men had to be recruited exclusively through the Internet and agree to a face-to-face interview in our research offices. Between April 2005 and March 2006, we recruited men who fulfilled the following eligibility criteria: 1) be at least 18 years old; 2) live in New York City or within commuting distance; 3) report using the Internet to meet men at least twice per month; 4) self-identify as a barebacker or as someone who practices barebacking (“Are you into bareback or do you consider yourself a barebacker?” however the respondent understood these terms); 5) have had intentional, condomless anal intercourse with a man met over the Internet (this was posed as a separate, unrelated question); and 6) use at least one of the six most popular Internet sites identified in the first phase of the study. We recruited approximately equal numbers of European Americans, African Americans, Latinos, and Asian Pacific Islanders. We also stratified the sample to include about two thirds who reported both being HIV-negative and having had unprotected receptive anal intercourse (URAI) in the previous year. Individuals who qualified were scheduled for a face-to-face interview as close as possible to the date of the initial screening. Of the 188 men who qualified, 64% completed a face-to-face interview.

### Procedure

After giving consent to participate in this study, each respondent underwent an in-depth, face-to-face interview conducted by one of three clinical psychologists on our staff. During this interview, we explored, among other topics, how participants defined “bareback sex” (see Carballo-Diéguez et al., in press). This was followed by a structured questionnaire that was completed through a Computer Assisted Self-Interview (CASI; Couper & Rowe, 1996). This report is based on the quantitative data. The interviews lasted about two hours in total, at the end of which respondents were compensated with \$50 for their time. This study had been reviewed and approved by the Institutional Review Board at the New York State Psychiatric Institute.

### Measures

**Demographic characteristics**—Respondents were asked to report their age, highest year of school completed, current occupational status (including whether participants were on disability), annual income (including money earned off the books), and ethnic and racial group membership. For ethnicity, respondents were asked to report if they considered themselves Latino or Hispanic. Those who did not identify as Hispanic or Latino were asked to report their race from the following categories: African American or Black, Asian or Pacific Islander, White or European American, Native American, and Other.

**Sexual Behavior**—Respondents were asked to report their sexual behavior with men and women during the previous two months using the Sexual Practices Assessment Schedule (SPAS; Carballo-Diéguez, Remien, Dolezal, & Wagner, 1999). Questions were posed both in formal language and vernacular (in *italics*) to increase comprehension. Of relevance for the present report are three questions on sexual behavior with men in the past two months: a) “How

many times did a male partner put his penis in your rectum? (*How many times did you get fucked in the ass?*), b) “How many times did a male partner put his penis in your rectum without a condom? (How many times did you get fucked in the ass without a condom?)”, and c) “How many men put their penises in your rectum without a condom? (How many men fucked you in the ass without a condom?)”.

**HIV Status**—Participants were asked whether they had been tested for HIV, if they had received their test result, and whether they were HIV infected (no actual HIV test was performed). Participants who reported having received a positive test result were coded as 1, and those who had not taken an HIV test or who reported being HIV negative were scored as zero.

**Partner Serodiscordance**—Participants who reported having URAI with one or more partners were asked, “Of those men, how many had actually told you they were HIV-negative and you had no reasons to doubt it?” and “Of those men, how many do you know to be HIV-positive?” The difference in the wording between the two questions was based on our interest to know if the participant had actually been expressly told by the partner he was HIV-negative (as opposed of assuming seronegativity given that the partner “looked healthy”), and our acknowledgement that someone may find out a partner's HIV-positive status without actually discussing it (e.g., finding HIV prescription drugs in his medicine cabinet). Those partners who were neither included in the HIV-negative nor HIV-positive counts were considered of unknown status. We created a dummy variable to measure the risk of having one or more potentially serodiscordant partners during URAI in the previous two months (0 = seroconcordant, 1=one or more serodiscordant partners). Among HIV-negative participants, having a serodiscordant partner was operationalized as having one or more partners who were HIV-positive or of unknown status. Among HIV-positive participants, a serodiscordant partner was operationalized as having one or more partners who were HIV-negative or of unknown status.

**Decisional Balance to Bareback (DBB)**—Based on our research team's review of the literature on barebacking, we developed a 30-item scale in which respondents were presented 15 statements twice. Each statement referred first to bareback sex being immediately followed by an identical statement asking about sex with condoms. Participants rated each statement using a 10-point scale ranging from 1 (Completely untrue for me) to 10 (Completely true for me). Respondents' score was computed by summing the net difference between bareback and condom use scores across the statements. Greater positive scores reflect greater benefits/gains associated with bareback sex. Negative scores reflect greater benefits/gains associated with condom use. Scores hovering close to zero indicate neutrality in the costs and gains associated with safer and unprotected anal sex. We include the items' content in Table 1.

### Data Analytic Strategy

Prior to conducting any analyses, we tested the normality of study measures. After comparing different transformations based on how well they reduced the magnitude of the skewness statistic, we selected a log-10 transformation to adjust for skewness in the count of URAI occasions and number of partners in the past two months, respectively.

We conducted exploratory principal axis factor analysis with varimax rotation to obtain orthogonal (“independent”) factors from the DBB items. Items with factor loadings greater than .50 were included within a factor (Kim & Mueller, 1978). This analytic approach was consistent with our intent to break down the underlying domains captured across the 15 statements. We then tested for differences across study measures by HIV status; and decided to stratify our analyses by HIV-status given the number of differences found. Finally, we tested

the bivariate association between sex risk behaviors and the DBB factor scores. Using Fisher's *r*-to-*Z* conversion, we tested whether the magnitude of the observed correlations were statistically significant by HIV status. We used a *Z* critical value of 1.96 (two-tailed test;  $p < .05$ ) to test whether the observed correlations between sex behaviors and the condom use decisional balance scores were different for HIV-positive and HIV-negative participants (i.e.,  $H_0: r(\text{HIV}) - r(\text{HIV}+) = 0$ ). We performed a post-hoc correction to decrease the Type-I error using the Bonferroni correction in order to reduce spurious findings due to the multiple comparisons carried out.

## Results

### Sample Description

Participants ( $N = 120$ ) reported a mean age of 34 years ( $SD = 9.63$  years), having some college education, and an average income of \$27,950 ( $SD = 23,890$ ). Close to two-thirds of the sample (63%) reported having a part-time or full-time job. Thirty-one men (26%) reported being HIV-positive (see Table 2). Compared to HIV-negative men, HIV-positive men were older by an average of six years and earned less income. HIV-positive participants were more likely to be underemployed or work fewer hours than HIV-negative participants ( $\chi^2(2) = 20.84$ ;  $p < .01$ ). In addition, 11 of the 13 men that reported being on disability were HIV-positive ( $\chi^2(1) = 25.98$ ;  $p < .01$ ). We found no differences in education or race/ethnicity by HIV status.

### Sexual risk behaviors and HIV status

We compared the sexual risk behavior reported by participants in the two months prior to the interview by HIV status (see Table 2). Approximately half of the sample reported having had one or more potentially serodiscordant partners in that period. Overall, participants reported having had receptive anal intercourse on multiple occasions ( $M = 6.93$ ,  $SD = 14.21$ ). HIV-negative men reported fewer partners in receptive anal intercourse ( $M = 8.03$ ,  $SD = 10.59$ ) than HIV-positive men ( $M = 14.32$ ,  $SD = 29.94$ ). HIV-positive men reported having greater number of URAI occasions, having more partners with whom they had URAI, and having a greater likelihood of having had URAI with a potentially serodiscordant partner.

Overall, participants reported having multiple partners ( $M = 5.89$ ,  $SD = 13.14$ ). HIV-negative men reported fewer partners with whom they had URAI ( $M = 4.71$ ,  $SD = 5.97$ ) than HIV-positive men ( $M = 5.97$ ,  $SD = 25.30$ );  $p < .05$ . We found no statistical difference in the total number of unprotected insertive anal intercourse occasions between HIV-negative ( $M = 5.29$ ,  $SD = 9.70$ ) and HIV-positive ( $M = 5.13$ ,  $SD = 7.87$ ) participants.

### Decisional Balance to Bareback

Using the principal axis factor analysis with varimax rotation, we extracted two factors explaining 58.29% of the total variance (see Table 1). We removed two scenarios (“[Bareback/Sex with condoms] relieves my stress” and “[Bareback sex/Sex with condoms] is my own personal decision”) from subsequent analyses because their factor loadings had similar weights across both factors.

The first factor, Coping with Vulnerabilities, had 8 items referring to a decisional balance between condom use and bareback sex as a way of coping with psychosocial vulnerabilities such as anxiety, loneliness, depression, homophobia, and racism. This factor explained 49.70% of the total variance and had strong reliability (adjusted Cronbach's  $\alpha = .89$ ).

The second factor, Pleasure and Emotional Connection, had 5 items referring to a decisional balance between condom use and bareback sex as a way of seeking pleasure and emotional

connection with other men. This factor explained an additional 8.59% of the total variance and had strong reliability (adjusted Cronbach's  $\alpha = .92$ ).

As expected, given the sample selection criteria, when a differential score was computed by subtracting participants' ratings to bareback items from their sex with condoms items across the 13 scenarios, we found MSM were more likely to favor bareback sex. A positive DBB score ( $M = 3.42, SD = 5.48$ ) reflected more benefits/gains associated with barebacking. Overall, participants' score on the Coping with Vulnerabilities subscale ( $M = -0.07, SD = 2.25$ ) indicated an equilibrium between the weight assigned to condom use and bareback sex. In contrast, respondents' score on the Pleasure and Emotional Connection subscale ( $M = 3.51; SD = 3.82$ ) indicated a decisional balance in favor of bareback sex. This finding, however, was less evident when we computed the mean difference for each subscale (see Table 3).

### Does DBB vary by HIV status?

We found differences in respondents' overall mean DBB scores by HIV status: HIV-positive men were significantly more likely to assign benefits/gains to bareback sex than HIV-negative men (see Table 1). When we looked at the subscales, HIV-positive men were significantly more likely to assign benefits/gains to bareback sex as a way of coping with vulnerabilities than HIV-positive men. We found no difference by HIV-status on the Pleasure and Emotional Connection subscale.

### Is there an association between DBB and sex risk behaviors?

Number of Insertive Partners for Unprotected Sex. We found moderate associations between respondents' DBB and number of partners (see Table 4). Among HIV-negative participants, number of partners was positively associated with greater benefits/gains to bareback sex in the overall score ( $r = .32; p < .01$ ), the Coping with Vulnerabilities subscale ( $r = .35; p < .01$ ), and the Pleasure and Emotional Connection subscale ( $r = .25; p < .05$ ). Among HIV-positive participants, number of partners was also positively associated with greater benefits/gains to bareback sex in the overall score ( $r = .36; p < .05$ ) and marginally significant in the pleasure and emotional connection subscale ( $r = .33; p < .10$ ). We found no correlation between number of partners and the coping with vulnerabilities subscale among HIV-positive participants.

Frequency of URAI. We also found moderate positive associations between respondents' number of URAI occasions and the benefits/gains of bareback sex (see Table 4). Among HIV-negative participants, number of URAI occasions was associated with greater benefits/gains of bareback sex in the composite score ( $r = .33; p < .01$ ), the coping with vulnerabilities subscale ( $r = .33; p < .01$ ), and the pleasure and emotional connection subscale ( $r = .28; p < .01$ ). Among HIV-positive participants, we found a positive association between the number of URAI occasions and greater benefits/gains to bareback sex in the overall score ( $r = .38; p < .05$ ). We also found a marginally significant trend in the association between the number of URAI occasions and the pleasure and emotional connection subscale ( $r = .33; p < .10$ ) and the coping with vulnerability subscale ( $r = .34; p < .10$ ).

After transforming the HIV-status specific correlations into Z-scores, we tested whether the magnitude of the correlations presented in Table 4 differed by HIV-status. We found the association between number of partners and URAI occasions was significantly stronger ( $Z = 2.85; p < .05$ ) for HIV-positive men ( $r = .97; p < .001$ ) than for HIV-negative men ( $r = .90; p < .01$ ). The magnitude of the association between the Coping with Vulnerabilities subscale and the benefits/gains of bareback sex was statistically smaller ( $Z = 1.97; p < .05$ ) for HIV-positive ( $r = .68; p < .01$ ) than for HIV-negative ( $r = .85; p < .01$ ) participants. We found no other differences in the correlational magnitude between HIV positive and HIV negative participants.

## Discussion

Prevalence estimates of bareback sex among MSM have ranged from 10% to 84% across study samples, making an accurate estimation of barebacking behavior difficult (Berg, 2008). One potential explanation for this variation is that the construct has been poorly defined or understood by participants in very different ways (Carballo-Diéguez et al., in press). As Berg (2008) argued, the limited research in this area has been associated with the absence of theoretically-derived psychometric scales to understand bareback sex. In this study, we developed and tested the psychometric properties of a decisional balance scale in a sample of MSM who engage in bareback sex. Decisional balance to bareback (vis-à-vis sex with condoms), as measured here, seems to be motivated by two factors: sex as a way of coping with social vulnerabilities and stressors, and sex as a way to connect and to experience pleasure with other men. When divided into subscales, we found the two subscales were orthogonally constructed, had strong internal consistency, and shared a moderate correlation between them. These findings are consistent with Díaz and Ayala's (2001) argument that sexual intimacy and pleasure among MSM is strongly linked to their desire to cope with social stressors such as racism, loneliness, and homophobia.

We found HIV-positive men were more likely to associate gains with bareback sex as a way of coping with social vulnerabilities than HIV-negative men. The extraction of a Coping with Social Vulnerabilities subscale highlights the need to account for social-level gains and losses when exploring the gains and benefits of engaging in bareback sex. Similarly, the extraction of a Pleasure and Emotional Connection subscale also acknowledges the importance of measuring individual and interpersonal-level gains and losses associated with bareback sex. HIV-positive and HIV-negative MSM reported similar gains associated with bareback sex in the Pleasure & Emotional Connection subscale. This work is consistent with Halkitis and colleagues' (2003) and Carballo-Diéguez & Bauermeister's (2004) arguments that bareback sex is an intentional act providing sexual and emotional rewards that may not be present when MSM use condoms for anal sex. Taken together, these findings suggest that MSM's decision to forego condoms is linked to the presence of social vulnerabilities and to the role of sexual intercourse as a mechanism to achieve emotional and sexual connections.

Even when men were asked to rate barebacking vis-à-vis condom use across multiple statements, we found the benefits/gains associated with bareback sex were positively associated with number of URAI occasions, number of partners, and risk of having one or more sexual intercourse occasions with a serodiscordant partner, regardless of HIV status. Taken together, these findings imply that MSM may benefit from a greater variety of HIV prevention technologies, particularly among men who assign larger costs/losses to condoms as the only effective HIV prevention method. It is vital to provide alternative harm reduction approaches to condom use, including access to pre/post exposure prophylaxis (Nodín, Carballo-Diéguez, Ventuneac, Balán, & Remien, 2008) and microbicides (Carballo-Diéguez et al., 2007; Carballo-Diéguez, Dolezal, Bauermeister, O'Brien, Ventuneac & Mayer, in press), as they may minimize the risk of HIV (re)infection. If found to be successful for HIV prevention, pre/post exposure prophylaxis and rectal microbicides may offer opportunities to decrease HIV infection further, particularly in spur-of-the moment situations where MSM have unprotected anal intercourse with partners of unknown serostatus (Nodín et al., 2008). Furthermore, exploring whether a person's DBB score is associated with intentionality to use these promising approaches may be useful. It is possible, for example, that MSM assigning greater costs/losses to condom use may consider using other prevention strategies as more viable. Additional support for ongoing research that explores the acceptability and effectiveness of pre/post exposure prophylaxis and rectal microbicides as a prevention mechanism that does not mitigate the gains associated with bareback sex is necessary.

This study has several limitations deserving mention. First, our results may not be generalizable to all MSM. By sample design, we recruited participants who reported identifying or engaging in bareback sex, and having sought out a partner over the Internet for bareback sex in the past two months. Future studies should replicate our study findings through a confirmatory factor analysis with other MSM samples. Furthermore, we do not know whether the DBB scale is associated with a person's willingness to change their condom use behavior. Given that our cross-sectional design limits our ability to test a causal hypothesis adequately, prospective studies exploring the temporal relationship across DBB scores and behavior change are required as they will help inform HIV prevention strategies. These limitations notwithstanding, our study is the first in developing a theoretically-derived scale that quantifies MSM's decisional balance to engage in bareback (vis-à-vis condom use) and test its psychometric properties in an ethnically diverse sample of MSM who self-report engaging in bareback sex.

## Acknowledgements

This research was supported by a grant from the National Institute of Mental Health (R01 MH069333-01, "Internet use and HIV risk among men in New York City"; Principal Investigator, Alex Carballo-Diéguez, Ph.D.). Dr. Bauermeister is a postdoctoral fellow supported by a training grant from the National Institute of Mental Health (T32 MH19139 Behavioral Sciences Research in HIV Infection; Principal Investigator, Anke A Ehrhardt, Ph.D.).

## References

- Berg RC. Barebacking among MSM Internet users. *AIDS & Behavior* 2008;12:822–833. [PubMed: 17676278]
- Carballo-Diéguez A, Bauermeister J. "Barebacking": Intentional Condomless Anal Sex in HIV-Risk Contexts. Reasons for and Against It. *Journal of Homosexuality* 2004;47(1):1–16.
- Carballo-Diéguez A, Dolezal C, Bauermeister JA, O'Brien W, Ventuneac A, Mayer K. Preference for gel over suppository as delivery vehicle for a rectal microbicide: results of a randomized, crossover acceptability trial among men who have sex with men. *Sexually Transmitted Infections*. In press
- Carballo-Diéguez A, Dowsett G, Ventuneac A, Remien R, Balan I, Dolezal C, Luciano O, Lin P. Cybercartography of popular internet sites used by New York City men who have sex with men interested in bareback sex. *AIDS Education and Prevention* 2006;18:475–489. [PubMed: 17166075]
- Carballo-Diéguez A, Exner T, Dolezal C, Pickard R, Lin P, Mayer KH. Rectal microbicide acceptability: results of a volume escalation trial. *Sexually Transmitted Diseases* 2007;34(4):224–229. [PubMed: 16906126]
- Carballo-Diéguez A, Remien R, Dolezal C, Wagner G. Reliability of sexual behavior self-reports in male couples of discordant HIV-status. *The Journal of Sex Research* 1999;36(2):152–158.
- Carballo-Diéguez A, Ventuneac A, Bauermeister JA, Dowsett GW, Dolezal C, Remien RH, Balán I, Rowe MS. "Barebacking": Definitions, motivations, norms, and community identity. *Culture, Sexuality, and Health*. In press
- Couper M, Rowe B. Evaluation of a computer-assisted self-interview component in a computer-assisted interview survey. *Public Opinion Quarterly* 1996;60(1):89–105.
- Díaz, R.; Ayala, G. *Social Discrimination and Health: The case of Latino gay men and HIV risk*. The Policy Institute of the National Gay and Lesbian Task Force; New York: 2001.
- Halkitis PN, Parsons JT, Wilton L. Barebacking among gay and bisexual men in New York City: Explanations for the emergence of intentional unsafe behavior. *Archives of Sexual Behavior* 2003;32:351–358. [PubMed: 12856896]
- Huebner DM, Proescholdbell RJ, Nemeroff CJ. Do gay and bisexual men share researchers' definitions of barebacking? *Journal of Psychology & Human Sexuality* 2006;18(1):67–77.
- Janis, IL.; Mann, L. *Decision making: A psychological analysis of conflict, choice, and commitment*. Cassel & Collier Macmillan; London: 1977.
- Janz, NK.; Champion, VL.; Strecher, VJ. The health belief model. In: Glanz, K.; Rimer, BK.; Lewis, FM., editors. *Health behavior and health education: Theory, research, practice*. Jossey-Bass; San Francisco, CA: 2002. p. 45-67.



- Kim, JO.; Mueller, CW. Introduction to Factor Analysis: What it is and how to do it. Sage University Press; London: 1978.
- Nodín N, Carballo-Diéguez A, Ventuneac A, Balán I, Remien R. Knowledge and acceptability of alternative HIV prevention bio-medical products among MSM who bareback. *AIDS Care* 2008;20(1):106–115. [PubMed: 18278621]
- Parsons JT, Bimbi DS. Intentional unprotected anal intercourse among who have sex with men: Barebacking—From behavior to identity. *AIDS and Behavior* 2007;11:277–287. [PubMed: 16775771]
- Pinkerton SD, Abramson PR. Is risky sex rational? *The Journal of Sex Research* 1992;29:561–568.
- Prochaska, JO.; Redding, CA.; Evers, KE. The Transtheoretical Model and Stages of Change. In: Glanz, K.; Rimer, BK.; Lewis, FM., editors. *Health Behavior and Health Education: Theory, Research, and Practice*. Jossey-Bass; San Francisco: 2002. p. 99-120.
- Shidlo A, Yi H, Dalit B. Attitudes toward unprotected anal intercourse: Assessing HIV negative gay or bisexual men. *Journal of Gay & Lesbian Psychotherapy* 2005;9(34):107–128.
- Zagumny MJ, Brady DB. Development of the AIDS Health Belief Scale (AHBS). *AIDS Education and Prevention* 1998;10:173–179. [PubMed: 9573437]

**Table 1**  
Mean Differences across 30 Decisional Balance Items by HIV-Status

	HIV– Mean (SD)	HIV+ Mean (SD)	<i>t</i>
Bareback sex makes me feel close to my partner	7.24(3.16)	7.16(3.28)	0.11
Sex with condoms makes me feel close to my partner	3.91(2.67)	3.33(2.98)	1.00
Bareback sex helps me feel less anxious	3.96(2.93)	4.81(3.38)	-1.33
Sex with condoms helps me feel less anxious	5.69(3.01)	4.03(3.05)	2.49*
Bareback sex is a lot of fun for me	7.71(7.83)	8.58(2.50)	-1.52
Sex with condoms is a lot of fun for me	4.81(3.05)	4.06(2.98)	1.18
Bareback sex helps me feel less lonely	3.24(2.96)	4.10(3.48)	-1.23
Sex with condoms helps me feel less lonely	2.51(2.26)	3.03(2.79)	-1.04
Bareback sex makes me feel very connected with my sexual partner	6.74(3.39)	6.93(3.25)	-2.70
Sex with condoms makes me feel very connected with my sexual partner	3.80(2.67)	3.47(3.04)	0.57
Bareback sex helps me feel less depressed	2.78(2.57)	4.23(3.52)	-2.09
Sex with condoms helps me feel less depressed	2.79(2.34)	3.00(2.69)	-0.42
Bareback sex is very intimate to me	7.82(3.00)	7.37(3.20)	0.71
Sex with condoms is very intimate to me	4.35(2.84)	2.73(2.42)	2.80
Bareback sex is a political statement for me	2.61(2.70)	3.07(3.37)	-0.74
Sex with condoms is a political statement for me	2.58(2.52)	2.17(2.42)	0.76
Bareback sex is what I like the most	7.46(3.18)	8.45(2.76)	-1.66
Sex with condoms is what I like the most	4.02(2.97)	2.90(2.89)	1.80
Bareback sex relieves my stress	4.22(3.40)	5.40(3.61)	-1.61
Sex with condoms relieves my stress	3.66(3.04)	2.59(2.38)	1.74
Bareback sex makes me feel less discouraged about the future	2.97(2.64)	3.31(2.63)	-0.61
Sex with condoms makes me feel less discouraged about the future	3.46(2.66)	2.83(2.44)	1.14
Bareback sex makes me feel better about myself	3.07(2.73)	3.75(3.22)	-1.10
Sex with condoms makes me feel better about myself	4.18(2.98)	2.83(2.70)	2.17
Bareback sex reduces my negative feelings about sex with men	3.02(2.82)	2.86(2.81)	0.27
Sex with condoms reduces my negative feelings about sex with men	3.43(2.79)	2.52(2.53)	1.57
Bareback sex helps me cope with a racist society	1.77(1.95)	2.07(2.46)	-0.70
Sex with condoms helps me cope with a racist society	1.69(1.72)	1.45(1.15)	0.70
Bareback sex is my own personal decision	8.36(2.74)	9.27(2.27)	-1.80
Sex with condoms is my own personal decision	8.01(3.01)	7.59(3.79)	0.55

\*  $p \leq .05$

**Table 2**  
Descriptive Statistics for Study Variables by HIV-Status

Variable	HIV- (N = 89)	HIV+ (N = 31)	Total (N = 120)	$t/\chi^2/F$
<i>Sociodemographic Characteristics</i>				
Age	32.03(9.83)	37.97(7.58)	33.57(9.63)	-3.46***
Education	14.85(3.06)	14.58(2.43)	14.78(2.90)	0.45
Income (in thousands)	30.59(25.03)	20.44(18.67)	27.95(23.89)	2.06*
Employment Status <sup>a</sup>				20.84***
Unemployed <sup>b</sup>	22	22	44	
Part-Time Work	18	2	20	
Full-Time Work	48	7	55	
Race/Ethnicity				7.03
White	24	11	35	
Latino	22	9	31	
Black	19	9	28	
Asian/Pacific Islander	16	1	17	
Other	8	1	9	
<i>Sexual Behavior in the prior two months</i>				
URAI occasions <sup>c</sup>	8.03(10.59)	14.32(26.94)	9.66(16.54)	-1.24
Number of partners with whom participants had URAI <sup>c</sup>	4.71(5.97)	5.97(25.30)	5.89(13.14)	-3.27**
Had a serodiscorant partner				6.04*
No	57	12	69	
Yes	32	19	51	
<i>Decisional Balance of Bareback Sex</i>				
Overall Score	2.85(5.71)	5.10(4.40)	3.42(5.48)	1.97*
Coping with Vulnerabilities Subscale	-0.37(2.38)	0.82(1.52)	-0.07(2.25)	2.55*
Pleasure & Emotional Connection Subscale	3.22(3.89)	4.37(3.51)	3.51(3.82)	1.46

\*  $p \leq .05$ ;

\*\*  $p \leq .01$ ;

\*\*\*  $p \leq .001$

<sup>a</sup>One HIV-negative participant refused to answer.

<sup>b</sup>Thirteen participants (11 HIV-positive and 2 HIV-negative) reported being on disability.

<sup>c</sup>Variables were transformed using the log-10 distribution to alleviate skewness. Non-transformed coefficients are presented, yet the t-statistics refer to the transformed variable distribution

**Table 3**  
Factor Loadings for the Decisional Balance to Bareback Scale

Statement	Mean (SD)	Loadings	
		Coping with Vulnerabilities	Pleasure & Emotional Connection
<i>Bareback sex/Sex with condoms...</i>			
“helps me feel less anxious”	-1.14(4.27)	<b>.59</b>	.31
“helps me feel less lonely”	0.84(2.88)	<b>.61</b>	.37
“helps me feel less depressed”	0.30(2.82)	<b>.70</b>	.32
“is a political statement for me”	0.25(2.53)	<b>.59</b>	.21
“makes me feel less discouraged about the future”	-0.25(3.15)	<b>.71</b>	.19
“makes me feel better about myself”	-0.56(3.54)	<b>.79</b>	.36
“reduces my negative feelings about sex with men”	-0.22(2.99)	<b>.66</b>	.30
“helps me cope with a racist society”	0.22(1.81)	<b>.64</b>	.13
“makes me feel close to my partner”	3.43(3.71)	.24	<b>.67</b>
“is a lot of fun for me”	3.32(4.61)	.32	<b>.85</b>
“makes me feel very connected with my sexual partner”	3.08(3.98)	.31	<b>.81</b>
“is very intimate to me”	3.76(4.07)	.27	<b>.82</b>
“is what I like the most”	3.96(5.28)	.30	<b>.81</b>
“relieves my stress” <sup>a</sup>	1.08(4.11)	.59	.51
“is my own personal decision” <sup>a</sup>	0.67(3.80)	.41	.47
Standardized Cronbach's Alpha Coefficient	$\alpha = 0.92$	$\alpha = 0.89$	$\alpha = 0.92$

Note. Bold typeface indicates items loading within each factor.

<sup>a</sup> Item not included in subscales score due to similar weights across both factors.

**Table 4**  
Correlation Matrix of Sex Behaviors and DBB by HIV-Status

	Number of Partners	Number of URAI occasions	Pleasure & Emotional Connection	Coping with Vulnerabilities	DBB (Overall Score)
Number of Partners		<b>.97<sup>†</sup></b>	<b>.33<sup>†</sup></b>	<b>.27</b>	<b>.36<sup>*</sup></b>
Number of URAI occasions	<b>.90<sup>**</sup></b>		<b>.33<sup>†</sup></b>	<b>.34<sup>†</sup></b>	<b>.38<sup>*</sup></b>
Pleasure & Emotional Connection Subscale	<b>.25<sup>*</sup></b>	<b>.28<sup>**</sup></b>		<b>.42<sup>*</sup></b>	<b>.95<sup>**</sup></b>
Coping with Vulnerabilities Subscale	<b>.35<sup>**</sup></b>	<b>.33<sup>**</sup></b>	<b>.64<sup>**</sup></b>		<b>.68<sup>**</sup></b>
DBB (Overall Score)	<b>.32<sup>**</sup></b>	<b>.33<sup>**</sup></b>	<b>.95<sup>**</sup></b>	<b>.85<sup>**</sup></b>	

Note. Correlations in bold and above the diagonal are for HIV-positive men (n=31). Correlations below the diagonal are for HIV-negative men (n=89). Positive scores in the DBB scales reflect higher bareback motivations.

- <sup>†</sup> p ≤ .10;
- \* p ≤ .05;
- \*\* p ≤ .01