THE ROLE OF SOCIAL STRESS IN THE SEXUAL RISK BEHAVIORS OF LATINO MEN WHO HAVE SEX WITH MEN

by

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Abstract

The Role of Social Stress in the Sexual Risk Behaviors of Latino Men who have Sex with Men

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Latino men who have sex with men (MSM) are disproportionately affected by HIV. The purpose of this study was to test a model linking sexual risk behaviors to social stress resulting from racism and heterosexism, psychological distress, condom-use intentions, and substance use. The model was informed by previous theoretical and empirical work, particularly the findings of Díaz, Ayala, and Bein (2004). Using an extant, quantitative data set from a sample of 264 Latino MSM in the New York City area, the goals were to examine the extent to which experiences of discrimination based on racism and heterosexism lead to higher psychological distress and substance use, in turn disrupting decisions about and intentions to use condoms, and resulting in unprotected anal intercourse (UAI). Statistical analyses provided evidence for direct and indirect paths between social stress and UAI through psychological distress and condom-use intentions. Evidence was also found for the moderating role of substance on the effect of intentions to use condoms and UAI.

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Chapter One: Introduction

Background and Significance

HIV prevalence among Latino men who have sex with men: Because HIV infection and AIDS disproportionately afflict Latino MSM, this study explores factors related to risky sexual behaviors and condom use in Latino MSM. According to the Centers for Disease Control and Prevention (CDC, 2007), MSM accounted for 68% of new HIV/AIDS diagnoses among adolescent or adult males in 2005, and half of these were among ethnic minority MSM. Latino MSM accounted for 17% of that proportion, even though the proportion of Latino men in the US population is only about 13% (US Census Bureau, 2000). Comparisons between Latino and white MSM reveal higher HIV prevalence rates among the former. Valleroy, MacKellar, Karon, et al. (2000) reported that HIV prevalence was 6.9% among Latino MSM 15-22 years of age in New York City while only 3.3% among white MSM from the same age cohort. Prevalence rates were estimated at 14% for Latinos and only 7% for whites (Valleroy et al., 2000) among MSM between the ages of 23-29. Despite efforts to eliminate ethnic disparities in HIV infection (e.g., Healthy People 2010, U.S. Department of Health and Human Services), differences between groups have persisted.

Much of the discourse around these differences focuses on the impact of societal problems, such as racism and heterosexism, in the experiences of ethnic MSM. However, the role played by discrimination and prejudice in placing individuals at risk for contracting HIV has only recently been studied (e.g., Díaz, Ayala, & Bein, 2004). Interventions aimed at HIV prevention have not sufficiently

reached out to ethnic minority populations (Peterson & Carballo-Diéguez, 2000), nor has research isolated how mainstream interventions need to be modified in light of ethnic men's experiences with discrimination and racism (Carballo-Diéguez, et al., 2005).

Study Aims

The current work is an attempt to gain an understanding of how experiences and challenges that Latino MSM encounter due to heterosexism and racism impact on risky sexual behaviors. A model is proposed that will examine factors that lead to sexual risk behaviors among Latino MSM. This study has three primary aims: 1) to examine the relationship between social stress and sexual risk behaviors among a sample of Latino MSM; 2) to examine the mediating roles of psychological distress and intentions to use condoms; and 3) to examine the moderating role of substance use. The study involves data analysis of an extant data set.

Conceptual Model

The conceptual model is presented in Figure 1. The model is informed by previous theoretical and empirical work, particularly the findings of Díaz, Ayala, and Bein (2004), as will be described below, and depicts experiences of racism and heterosexism as distal determinants of the more proximal correlates of sexual risk (i.e., number of unprotected anal intercourse occasions). This model describes possible pathways to sexual risk behaviors. Experiences of discrimination based on racism and heterosexism are posited to lead to higher psychological distress and substance use, disrupting decisions about and

intentions to use condoms, which in turn can result to high-risk sexual behaviors. Psychological distress is posited to mediate the association between social stress with intentions to use condoms, and these in turn lead to unprotected anal intercourse (UAI). Additionally, it is hypothesized that substance use moderates the association between intention to use condoms and actual condom use during anal intercourse. The proposed model will be tested to examine the unique roles of social stress, psychological distress, condom use intentions, and substance use on the sexual risk behaviors of Latino MSM.

Theoretical Framework

General discussion about stress.

The discourse on stress centers on micro and macro-events called stressors, the perception and appraisal of stressors, effective and ineffective coping strategies and responses, sustained reactivity to a stressor called psychological distress, and the mental health and physiological consequences or outcomes caused by stress (poor decision-making, poor judgment or impaired judgment, anxiety, low self-esteem, depression, etc.). When coping is effective, support is present, and resiliency factors prevail, the potential negative effects of stress may be curtailed, attenuated or blocked altogether. Stress-reactivity is the individuals' psychological and physiological responses to challenging or threatening events or conditions (Cohen, Kessler, & Underwood-Gordon, 1997). The notion of stress developed out of animal models to explain the "fight" or "flight" response to stressors (Cannon, 1932). The concept of stress was first thought of as a cause (the stimulus or stressor) and later evolved to comprise the

physiological response to stressful stimuli. More recently, stress-reactivity was defined as “a process in which environmental demands tax or exceed the adaptive capacity of an organism, resulting in psychological and biological changes that may place persons at risk for disease” (Cohen, Kessler, & Underwood-Gordon, 1997, p. 3). Since stressors are omnipresent, being under stress per se is not a problem but sustained stress-reactivity and unresolved stressors can, over time, place one at risk of mental illness, physical illness and disease, and even death.

Research in this area is typically concerned with specifying the effects of various stressful events on mental health, and examining the roles of mediating and/or moderating factors in these relationships (Lin & Ensel, 1989). Exposure to chronic and acute stressors is proposed to have a direct negative impact on psychological well-being (Ensel & Lin, 1991). Lin and Ensel’s (1989) model considers both individual and social resources in terms of perception, coping with, and buffering the effects of stressful events. Personal (e.g., self-esteem) and social (e.g., community involvement, social support) resources are considered factors that attenuate the impact of stressful events. Individuals may experience psychological distress (e.g., anxiety, depression) after they have tried to cope and deal with stressful events (Lazarus & Folkman, 1984), or once there is a detrimental impact on one’s self-concept (e.g., self-esteem, mastery; Pearlin, Menaghan, Lieberman, & Mullan, 1981).

Social stress.

In addition to general stress faced by all human beings, Latino MSM

encounter unique stressors related to racism and heterosexism and there is a rich literature that addresses these issues (Carballo-Diéguez, et al., 2005; Díaz, Ayala, & Bein, 2004; Díaz, Ayala, Bein, Henne, & Marin, 2001; Meyer, 1995; Rosario, Rotheram-Borus, & Reid, 1996; Rosario, Schrimshaw, Hunter, & Gwadz, 2002). Because of the racist and heterosexist nature of U.S. society, minority status gay and lesbian individuals are more likely to experience negative events, prejudice and discrimination than non-minority individuals. The concept of social stress as conceptualized by Brooks (1981) captures these types of social prejudices, resulting from social group membership. Many individuals experience negative events such as prejudice and discrimination on the basis of membership in a socially ascribed and negatively stereotyped social group (Brooks, 1981; Meyer, 1995, 2003). Prejudice has been defined as "an aversive or hostile attitude toward a person who belongs to a group, simply because he belongs to that group, and is therefore presumed to have the objectionable qualities ascribed to the group" (Allport, 1954/1979, p. 7). Discrimination has been referred to as practices or actions to exclude others on the basis of group membership that have detrimental consequences for both an individual and discriminated group (Allport, 1954/1979). Social stress can occur in a broad range of contexts, varying in magnitude, and thus its impact on individual psychological and physiological responses (Clark, Anderson, Clark, & Williams, 1999).

Racism.

Clark, Anderson, Clark, and Williams (1999) defined racism as "beliefs,

attitudes, institutional arrangements, and acts that tend to denigrate individuals or groups because of phenotypic characteristics or ethnic group affiliation….either held by or perpetuated by members of a different ethnic group (intergroup racism) and by members of the same ethnic group (intragroup racism)" (p. 805). Although African Americans have been the targets of racism for long periods of time due to the race relations embedded in the culture of the US, oppressive forces have affected Latinos as well (Díaz, Ayala & Bein, 2004). Ethnic prejudice and discrimination rely on the same ideology as racism, but attitudes and beliefs are held toward individuals based on their ethnic group membership. Stereotypes are not only held about individuals based on ethnic background or ancestry (e.g., Latino), but also based on nationality (e.g., Mexican).

Racism within mainstream gay community.

Racism is not just limited to outside the gay community, a predominantly white community, and racist attitudes and discrimination may become part of Latino MSM's experience within this community (Carballo-Diéguez, 1998; Díaz, Ayala, & Bein, 2004; Rosario, Scrimshaw, & Hunter, 2004). Latino MSM may feel liberated about their sexual identity within the gay community but, at the same time, may have to contend with prejudice and discrimination because of their ethnic group membership (Peterson & Carballo-Diéguez, 2000).

Heterosexism.

In addition to lack of resources and opportunities in the United States and prejudice and discrimination stemming from racism, Latino MSM also contend with prejudice and discrimination due to heterosexism (Díaz et al., 2001; Díaz et

al., 2004). Heterosexism is defined as "the ideological system that denies, denigrates, and stigmatizes any non-heterosexual form of behavior, identity, relationship or community" (Herek, 1995, p. 321). MSM experience overt acts of verbal and physical assaults, harassment, negative attitudes and discrimination because of society's attitudes about their sexual orientation (Herek, 1995).

Ingroup sexual prejudice and discrimination.

Sociocultural context of heterosexism among Latinos: To fully understand the experiences of ethnic minority MSM, it is also important to consider sociocultural contexts within their respective ethnic enclaves. The sexual prejudice and discrimination that Latino MSM experience within their respective ethnic group are the result of negative cultural beliefs and norms about homosexuality that, regrettably, various minority communities generally share with the majority heterosexist society. Among Latinos, three factors are crucial in understanding MSM's experiences within their cultural context: 1) the importance of family, 2) the support of traditional gender roles, and 3) the role of religion (Cantú, 2000; Carballo-Diéguez, 1998; Carballo-Diéguez & Dolezal, 1994; Díaz, 1998; Díaz, et al., 2001; Marín & Marín, 1991; O'Donnel, Agronick, San Doval, Duran, Myint-U, & Stueve, 2002; Zea, Reisen, & Díaz, 2003).

Because of the high value placed on family and maintaining strong family ties, many MSM may not be willing to disclose their sexual orientation out of fear of hurting their families (Marín & Marín, 1991). MSM will often sacrifice their own well-being to avoid the risk of having their family suffer the "consequences" of others finding out about their sexual orientation (Zea, Reisen, & Díaz, 2003). In a

study undertaken by Díaz, et al. (2001), Latino MSM reported hearing during childhood that “gays are not normal people,” that they “would grow up to be alone,” and that they are “an embarrassment to the family.” MSM reported that, as adults, “they had to move away from family and friends to be able to live their homosexual lives,” “pretend they were straight,” and were even harassed by police (p. 929). Even when there is some tolerance about one’s same-sex orientation, it often comes under the form of silence (Cantú, 2000; Díaz, 1998; O’Donnel, et al., 2002).

Traditional gender roles dictate how individuals should behave to conform to culturally appropriate ways (Carballo-Diéguez, Dolezal, Nieves-Rosa, & Diaz, 2000; Peterson & Carballo-Diéguez, 2000). Machismo, for example, requires that the male be held to ideal standards of being strong, aggressive, sexually experienced, and open to having many partners (Cantú, 2000; Carballo-Diéguez & Dolezal, 1994). Gay men, often perceived as effeminate, are seen as “failed” men because, according to this ideology, they do not embody the macho role (Carballo-Diéguez, 1998; Díaz, 1998).

Religion has had a major influence on people’s negative views about homosexuality (Carballo-Diéguez, 1998; Stokes & Peterson, 1998). Homosexuality, within conservative religious views, is seen as unnatural, a sin and perversion, and one’s sexuality has been used to make implications about one’s morality (or lack thereof) (Crawford, Allison, Zamboni, & Soto, 2002). Within Latino ethnic groups, negative views about homosexuality are perpetuated through conservative religious views.

Negative attitudes and beliefs lead many MSM to feel that they are not "normal," to conceal their sexual orientation, and to experience feelings of guilt, shame and poor self-image (Carballo-Diéguez, 1998; Zea et al., 2003). Over time these negative experiences affect the individual who incorporates the negative attitudes and beliefs about both one's race/ethnic group and homosexuality into his own attitudes or beliefs (Herek, 1995; Meyer, 2003; Rosario, et al., 2002). Latino MSM often hide their same-sex attractions and develop strategies to try to cope with such oppressive forces (Carballo-Diéguez, 1998) that exacerbate the chronic strain and tension they experience (Meyer, 2003). Carballo-Diéguez (1998) pointed to some negative consequences of MSM's coping mechanisms. According to the author, even after immigrating to the U.S. and feeling liberated about their sexuality, many Latino MSM face challenges because of the coping mechanisms they have developed over time in their countries of origin.

Díaz's model of sexual risk.

Díaz and colleagues (2004) examined the extent to which social oppression leads to the sexual risk behavior among Latino MSM. The authors posited that negative experiences due to racism and heterosexism lead to psychological distress and that these two factors lead to circumstances that make engaging in safe sex problematic. They posited that even when men have intentions to engage in safe sex, they will place themselves in situations where engaging in safe sex becomes difficult. For example, in trying to reduce feelings of depression or isolation, men may resort to alcohol or drugs, thereby making

safe sex difficult to engage in for these men. Using a probability sample of 912 Latino men, Díaz and colleagues found empirical support for their model. They found that racism, heterosexism and poverty predict psychological distress, which in turn predicts the extent to which one participates in situations (i.e., substance use) that make it difficult to engage in safe sex practices. These in turn predict the extent to which MSM engage in risky sexual behavior, as operationalized by the authors.

Review of Empirical Evidence

Generally, studies have found evidence of a relationship between prolonged social stress and psychological distress (e.g., depression, anxiety, suicidality). Williams, Neighbors, & Jackson (2003) reviewed empirical findings of population-based studies published from late 1990's through early 2000's, and concluded that psychological distress is related to reports of unfair treatment due to one's racial or ethnic background. Empirical studies have found that experiences of sexual prejudice and discrimination, or victimization based on sexual orientation were related to psychological distress (Herek, Gillis, & Cogan, 1999; Mays and Cochran, 2001; Meyer, 1995; Peterson, Folkman, & Bakeman, 1996; Stokes & Peterson, 1998).

Meyer (1995), using baseline data from a longitudinal study of gay men in New York City, reported that internalized homophobia and experiences of discrimination predicted psychological distress (e.g., anxiety and suicidality). Herek, Gillis and Cogan (1999) explored the association between experiences of hate crimes and psychological distress (depression, anxiety and affect) and

found that victims of hate crimes during their adolescent years showed more psychological distress than individuals who had recently experienced similar events in adulthood (Herek, et al., 1999), thus one can infer from this finding that social stress places adolescents under tremendous turmoil and tension. Among individuals who were victimized later in their life, experiences of hate crimes were related to more psychological distress as compared to crimes not based on one's sexual orientation (Herek, et al., 1999). In a study conducted by Mays and Cochran (2001), findings support the perspective that discrimination can have harmful effects on the mental health of gay individuals. In a review of empirical research, Meyer (2003) concluded that gay, lesbian and bisexual individuals indeed have higher prevalence of psychological distress than heterosexuals, and that this disparity could be explained by social stress. Díaz and colleagues (2001), using a probability sample of gay and bisexual Latino men recruited from gay-specific venues in three U.S. cities (Los Angeles, Miami and New York City), found that social stress related to racism and heterosexism predicted depression, anxiety and suicide ideation.

Empirical evidence has not been conclusive regarding the relationship between psychological distress and sexual risk. For example, Parsons, Halkitis, Wolitski and Gomez (2003) found that among HIV-positive MSM, men who reported being depressed were more likely to engage in unprotected receptive anal sex. Similarly, using baseline data from 4,295 MSM recruited for a randomized intervention study in six U.S. cities (the EXPLORE study), Colfax et al. (2004) reported that depression was related to increased sexual risk. In this

study, sexual risk was operationalized as having anal sex without a condom with either an HIV- positive partner or one of unknown serostatus. However, Stall et al. (2003) using a similar operationalization of sexual risk did not find an association with depression using a household probability telephone sample of MSM in four U.S. cities. Moreover, a meta-analysis conducted by Crepaz and Marks (2001) examining the association between psychological distress and sexual risk behaviors showed mixed results for findings among MSM. Effect sizes ranged between –.17 and .55 among studies with MSM samples and only 3 of the 15 reported in the meta-analysis were larger than .30. The authors found a small effect size and questions were raised regarding the nature of the relation between the constructs. With depression for example, the possibility of curvilinear association (i.e., inverted U) was raised which would indicate that sexual risk may be highest for those with moderate levels of depression, since individuals with severe depression may not engage in as much sexual activity.

UAI has been found to be higher among individuals who use alcohol or drugs during sexual encounters (Lemp, et al., 1994), and particularly with casual partners (Dolezal, Carballo-Diéguez, Nieves-Rosa, & Diaz, 2000). Substance use impairs judgment, increasing the likelihood that one will engage in UAI (Stall & Purcell, 2000). MSM may use alcohol and drugs to cope with stress (McKirnan, Vanable, Ostrow, & Hope, 2001). McKirnan, Ostrow, and Hope (1996) posited that substance use is a way for gay men to escape from both stress and HIV risk-related anxiety.

Among Latino MSM, substance use has been found to be associated with

sexual risk behaviors. Using a convenience sample of 307 Latino MSM living in New York City, Dolezal, Carballo-Diéguez, Nieves-Rosa, and Diaz (2000) explored substance use during sex. MSM who reported UAI reported substance use more frequently than those who did not engage in UAI, providing support that substance use may lead to impaired judgment and therefore sexual risk behaviors. However, the authors showed that the relationship between UAI and substance use is not clear-cut. Comparisons of data reported by men who engaged in both unprotected and protected anal intercourse showed that they were just as likely to use condoms on occasions when alcohol and drugs were used as in substance-free occasions. Using a convenience sample of Latino MSM in San Francisco, Díaz, Morales, Bein, Dilan and Rodriguez (1999) found that men who were categorized in a high-risk group on the basis of having at least one occasion of UAI with a non-monogamous partner, reported more substance use during anal intercourse.

In summary, empirical studies have found some support for the proposed model affirming the paths specified in Figure 1. As mentioned earlier, Díaz, Ayala and Bein (2004) connected these constructs under one model to explore the extent to which social stress due to racism and heterosexism leads to sexual risk behavior among Latino MSM.

Operationalization of the Sexual Risk Construct

Díaz, Ayala and Bein (2004) operationalized sexual risk by categorizing the participants into low versus high sexual risk groups. The high-risk group consisted of men who engaged in UAI with men with whom they were not

involved in a monogamous relationship, and the remaining men (those involved in monogamous relationships or who used condoms during anal intercourse) were placed in the low-risk group. Defining what is one's risk of contracting HIV has been problematic because of the difficulty in both determining what is "acceptable risk" and in developing algorithms to weight risk based on a number of factors (e.g., condom use, number of partners, HIV status of sex partner(s), and viral load and the likelihood of infectiousness) for each sexual occasion (Schroder, Carey & Vanable, 2003). For an example of a model determining risk for HIV infection among women refer to the Vaginal Episode Equivalent Index developed by Susser, Desvarieux, and Wittkowski (1998; as cited by Schroder, et al., 2003). Schroder, Carey and Vanable (2003) identified the challenges with assessing sexual risk behavior. Focusing on unprotected intercourse, the authors reviewed sexual risk behavior research (i.e., intervention and correlational studies) and concluded that the number of times an individual engages in unprotected sexual intercourse in a specified amount of time is the best outcome in operationalizing risk as compared to the likelihood that one will engage in risk as measured by "relative frequency data" (i.e., unprotected sex compared to the overall total number of occasions) whether measured via proportions, categorical measures or dichotomous variables (for examples refer to Schroder et al., 2003, p. 77). Thus, the number of UAI occasions in the previous two months will be used to operationalize sexual risk in this study.

The model under study (see Figure 1) depicts the following hypothesized relationships: experiences of ethnic and sexual prejudice and discrimination may

trigger (1) feelings of depression and low self-esteem leading to (2) substance use and self-medication that stimulates impulsivity and (3) poor decisions around the intention to use a condom; culminating in (4) UAI. Substance use is likely to correlate positively with distress. However, in the model (Figure 1) substance use is treated as an independent factor from psychological distress (albeit the factors are hypothesized to be related) in the path showing the relation between social stress and UAI. The model explores the consequences of racism and heterosexism on psychological distress and substance use that interfere with the intent to use a condom thereby resulting in UAI.

Study Questions and Hypotheses

The aim of this study is to test a model (Figure 1) that considers psychosocial processes as linked to racism and heterosexism in predicting sexual risk behavior among Latino MSM. Experiences of racism and heterosexism are posited to be distal determinants of the more proximal correlates of sexual risk. In this model, social stress based on racism and heterosexism leads to psychological distress and substance use, which in turn lead to poor decisions and intentions to use condoms, and sexual risk behaviors (i.e., UAI occasions). This framework allows us to examine the impact of societal influences on individuals' psychological well-being and in turn on sexual risk behaviors.

The following hypotheses will be tested:

1) social stress is associated with UAI;
2) social stress is associated with psychological distress, substance use, and

condom use intentions;

3) psychological distress is associated with condom-use intentions;
4) psychological distress is associated with UAI;
5) intent to use condoms is associated with UAI;
6) psychological distress mediates the relation between social stress and condom use intentions;
7) condom use intentions mediates the association between social stress and UAI;
8) condom use intentions mediates the association between psychological distress and UAI; and
9) substance use (particularly when concurrent with sex) will moderate the effect of condom use intentions on UAI.

Chapter Two: Research Design and Methods

Study Sample

The study sample was recruited for a randomized controlled trial connected to an HIV-prevention intervention developed for Latino gay and bisexual men (Latinos Empowering Ourselves [LEO], Carballo-Diéguez, Principal Investigator; see Carballo-Diéguez et al., 2004). The intervention aimed to reduce unprotected intercourse by stimulating empowerment, critical thinking, self-efficacy, and peer support. The men were recruited from bars, parks, and beaches frequented by gay men, as well as gay parades and organizations in the NYC area from December, 1998 to June, 2001. Inclusion criteria for the intervention study required participants to self-identify as Latino or of Latin American descent, identify as gay or bisexual, be 18 years of age or older, and have had unprotected anal intercourse at least once during the period of two months prior to the screening for the study.

Of the 299 Latino gay and bisexual men who underwent the baseline assessment in the original study, 34 were excluded because they indicated no occasions of unprotected anal intercourse in the previous two months, an eligibility criterion for study participation in the original study. Data for these cases were included in the analyses for this study.

Data for 35 participants who indicated that they had exchanged sex for money, food, or housing were compared with data from the overall sample since experiences and challenges may be unique to this group of men. A separate

model that considers the unique set of issues for this group would be best to inform prevention efforts. Between-group comparisons were performed to examine if there were any differences on anti-gay stigma and victimization, problems attributed to homophobia and racism, depression, self-esteem, substance use, and UAI. Significant differences were found ($p < .01$) between the groups, providing support for excluding data from the analyses of men who reported that they had exchanged sex. Consequently, the final size of the sample for inclusion in the current study was 264 men.

Procedure

In the original study, interviews included both an interviewer-administered questionnaire and self-administered survey that lasted about two hours. Participants were paid $30 upon completion of the baseline assessment. The Institutional Review Board of the New York State Psychiatric Institute approved the original study.

Measures

From all the measures included in the baseline assessment of the original study, those of interest for the present study are described below.

Demographic Information. The demographic section of the assessment included questions on age, place of birth, year of immigration (when appropriate), years of education, and salary, among others.

Mainstream Acculturation. The five-item Short Acculturation Scale (Marin, Sabogal, Marin, Otero-Sabogal, & Perez-Stable, 1987) was used to assess the extent to which participants read, spoke and thought in English versus Spanish.

(1) “Only Spanish,” (2) “More Spanish than English,” (3) “Both equally,” (4) “More English than Spanish,” and (5) “Only English.” Coefficient alpha = .92 (Marin et al., 1987).

Machismo. The scale developed by Cuellar, Arnold, and Gonzalez (1995) was used to measure the extent to which participants agreed with machismo statements, such as “A wife should never contradict her husband in public.” Items were rated on a 4-point scale, ranging from (1) “Disagree” to (4) “Agree.” Cronbach alpha = .90.

Independent variables.

Social Stress related to Gay Experiences and Perceptions. Three dimensions of social stress assessed (1) *experiences of anti-gay violence and victimization, (2) perceptions of stigma, and (3) attributions of setbacks to heterosexism*. To assess participants’ experiences of *anti-gay violence and victimization* in the previous year and experiences after 16 years of age or older, a modified version of the Hate Crimes Questionnaire (Herek and Berrill, 1992) was used. Participants were asked to report the number of times they experienced assualts both verbal and physical, threats of violence, harrassment, and negative attitudes and discrimination in the past year, or since age 16 (not including the past twelve months) because they were presumed to be gay (“In the past year, how many times have you been threatened with physical violence?”).

Stigma: To assess participants’ *perceptions of stigma*, the Perceptions of Local Stigma Scale was adapted from Herek and Glunt (1995) to reflect

experiences within NYC and the Latino community ("Most people (in NYC area/in the Latino Community) think less of a person who is gay/bisexual."). Items were rated on a 4-point scale, ranging from (1) "Strongly Disagree" to (4) "Strongly Agree." Scores were obtained by computing the means for each subscale. Herek and Glunt (1995) reported Cronbach's alpha = .88 for the original scale. In this study, Cronbach's alpha's = .65 and .74 for each subscale (within NYC area, Latino Community, respectively).

Setbacks due to Homophobia: The *Attributions of Personal Setback to Prejudice* (Male Version; Herek & Glunt, 1995) assessed the extent to which participants attributed their problems and setbacks to discrimination because of their sexual orientation. The scale included items such as, "Many of the bad things in my life happen because of homophobia." Items were rated on a 4-point scale, ranging from (1) "Strongly Disagree" to (4) "Strongly Agree." Cronbach alpha = .88.

Social Stress related to racism: The *Attributions of Personal Setback to Prejudice* scale (Herek & Glunt, 1995) was adapted for attributions based on racism ("Many of the bad things in my life happen because of racism."). Items were rated on a 4-point scale, ranging from (1) "Strongly Disagree" to (4) "Strongly Agree." Cronbach alpha = .87 in this study.

Factor analysis was performed with all of the social stress variables. Using a criterion of .60 for the Anti-Image Correlation, anti-gay stigma in NYC and in the Latino community were dropped from this analysis. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy was .64 indicating that the sample

size was adequate. One factor was extracted and accounted for 60.53% of the variance. Factor loadings of the four variables (anti-gay violence and victimization in the last year and since age 16, problems attributed to homophobia, and problems attributed to racism) ranged from .73 to .82.

Mediators.

Depression: The Beck Depression Inventory (BDI-II; Beck, Steer, & Brown, 1996) assessed the severity of cognitive, affective, somatic, and performance symptoms of depression within the past 2 weeks. Items are rated on a 4-point scale ranging from 0 to 3. The total score was obtained by adding the score for each of the 21 items. The following cut-off scores have been recommended by Beck, Steer, and Brown: none or minimal depression is equivalent to a score of 13 or less, mild-to-moderate depression 14-19, moderate-to-severe depression 20-28, and severe depression 29-63. The alpha coefficient has been reported to be .93 for non-psychiatric populations (Beck et al.,1996).

Self-esteem: The 10-item Self-esteem Inventory developed by Rosenberg (1965) was used to measure self-esteem. The items were rated on a 4-point Likert response scale ranging from (0) “strongly agree” to (3) “strongly disagree.” Scores were computed by reversing the scale of the negatively worded items and obtaining the mean. Cronbach’s alpha = .77.

Condom use intentions: Four statements assessed participants’ intentions to use condoms (e.g., “I intend to use a condom every time I penetrate someone;” “I intend to have my partner(s) use a condom every time they (he)

penetrate(s) me.") for anal and oral sex. Participants were asked to rate their level of agreement on a scale from (1) "Disagree Very Much," to (6) "Agree Very Much." Mean scores were computed. Cronbach's alpha = .79.

Moderators.

Substance use. The substance use inventory developed by Dolezal, Carballo-Diéguez, Nieves-Rosa and Díaz (2000) assessed type of substance use (e.g., alcohol, marijuana, poppers), frequency of use in the past two months, and use immediately before or during sex ("Have you ever used (alcohol/marihuana/ poppers, etc.)," " How often have you used (alcohol/marihuana/poppers, etc) during the past two months," "During the past two months, how often have you used (alcohol/marihuana/poppers, etc) immediately before or during sex?"). For frequency in the previous two months and with sex, participants were asked to select from the following response scale: (0) "Never/None," (1) "Once a month or less," (2) "2-3 times a month," (3) "About once a week," (4) "2-6 times a week," (5) "About once a day," and (6) "More than once a day."

Dependent variable.

Sexual risk behavior. The outcome variable is operationalized as the number of UAI occasions as measured by the Sexual Practices Assessment Schedule for Men who have Sex with Men (Carballo-Diéguez, Dolezal, Nieves-Rosa, Díaz, 1997 [SPAS MSM 97]). This instrument asked about the number of occasions of different sexual practices, including UAI, over a period of two months prior to the interview with three different types of partners, both male and female: 1) lover defined as a person with whom the respondent is involved in a

relationship of mutual commitment and with whom he has sex; 2) one-night-stand defined as someone with whom the respondent had sex only once; and 3) anyone else (not included in the first two types). Data about male partners were considered for the present study. For example, if the participant reported sex with a male lover, questions about sexual practices included "On how many of those occasions did he put his penis in your rectum (did he fuck you) without a condom?" Carballo-Diéguez, Remien, Dolezal, and Wagner (1999) established reliability of an earlier version of this instrument through test-retest of participants and comparison of couple's responses (weighted kappas ranging from .83 to 1.00).

Data Analytic Strategy

To test the research hypotheses proposed in this study, there were several phases of data analysis. First, data quality checks were performed through inspection of both, summary statistics and graphical displays to check for outliers and violation of assumptions. There were several outliers with respect to the number of anti-gay violence and victimization incidents since age 16 and in the previous year. Four cases whose scores ranged from 97 to 580 on the number of anti-gay violence and victimization incidents in the previous year were assigned a score of 65, which is in the 98th percentile. Similarly, four cases on the number of anti-gay violence and victimization incidents since age 16 excluding the previous year were assigned a score of 1201, closer to a score in the 98th percentile. In addition, mathematical transformations were performed on variables, as necessary, to convert original scores using a natural log to a

distribution that is more nearly normal. Given that the main analysis for the outcome variable (number of UAI occasions) involved using a Poisson regression, a transformation was not performed on UAI.

Second, reliability analyses were performed to check for internal consistency in the measures (Cronbach's alphas were reported after a description of each measure in the Methods section).

Third, associations between potential covariates and variables included in the model, including the outcome variable (e.g., UAI), were examined to assess confounding effects. Specifically, relationships between age, years of education, salary, acculturation, machismo, and HIV status with each variable included in the model were examined.

Fourth, associations were examined for each variable included in the model to establish the hypothesized direct relationships, a necessary requirement to test for the hypothesized indirect relationships (e.g., mediation; Baron & Kenny, 1986).

In addition, separate analyses were run to examine the coefficients after accounting for possible confounders and the proportion of variance in the outcome variable explained by the independent variables either using multiple (simultaneous) linear regression for the proposed mediators and moderators, or Poisson regression for the dependent variable (e.g., UAI).

Hypothesis 1 posited that social stress is associated with UAI. It was tested by entering the social stress variables in a Poisson regression to predict UAI, while controlling for covariates. Due to the distribution of the dependent

variable (i.e., count data), Poisson regression was used to adjust the standard errors using a deviance score since data were overdispersed.

To test Hypothesis 2, that social stress is associated with psychological distress, substance use, and condom use intentions, several multiple linear regressions were performed while controlling for covariates as appropriate. Two multiple linear regressions were computed to test the associations between the social stress variables and psychological distress (depression and self-esteem, separately), after accounting for years of education and machismo. Similarly, three multiple linear regressions were run by entering the social stress variables while accounting for covariates to predict substance use (number of substances used, frequency of use in the previous two months, and frequency of use concurrent with anal intercourse in the previous two months, separately). Finally, the social stress variables were entered in a multiple linear regression to predict condom-use intentions while accounting for acculturation.

Hypothesis 3 posited that psychological distress is associated with condom-use intentions. It was tested using a mulitple linear regression by entering depression and self-esteem while controlling for acculturation. To test Hypothesis 4, that psychological distress is associated with UAI, a Poisson regression was performed by entering depression and self-esteem in predicting UAI while controlling for acculturation and HIV status. Similarly, Hypothesis 5, that intent to use condoms is associated with UAI , was tested by entering condom use intentions in a Poisson regression to predict UAI while controlling for acculturation and HIV status.

Hypotheses 6, 7, and 8 posited that psychological distress mediates the relation between social stress and condom use intentions, condom use intentions mediates the association between social stress and UAI, and condom use intentions mediates the association between psychological distress and UAI, respectively. These were tested using the criteria outlined by Baron and Kenny (1986) for mediation while controlling for the covariates (i.e., age, years of education, salary, acculturation, machismo, and HIV status) that were found to be significant in the third phase of data analysis. Full mediation will be demonstrated if a significant direct relationship is shown to be non-significant once the mediator is entered in the analysis (Baron & Kenny, 1986). According to Baron and Kenny, partial mediation will be demonstrated if a significant direct relationship remains significant once the mediator is entered in the equation but the effect is attentuated (i.e., the parameter is smaller numerically).

In the final phase of data analysis, Hypothesis 9, that substance use (particularly when concurrent with sex) will moderate the effect of condom use intentions on UAI, was tested using an interaction term (Aiken & West, 1991) in a Poisson regression to examine the moderating role of substance use on condom use intentions and UAI.

Power

To estimate the statistical power of the analyses in testing these hypotheses, a medium effect size was estimated for the effect of the independent variables on the dependent variable. Cohen (1992) proposed various values as conventions for observed effects. A medium effect size for the test of

significance of a sample *r* is .30, and for the F test of the multiple R^2 in multiple regression analysis f^2 is .15. With a set of 12 independent variables for a *F* test of the multiple R^2, a sample size greater than 130 is sufficient to detect a medium effect size for power of .80 and alpha level of .05 (Cohen, 1992).

Chapter Three: Findings

Sociodemographic Characteristics

The 264 participants ranged in age from 18 to 67 years (*M* = 32.45, *SD* = 8.41); 50% of the sample was between the ages of 25 and 38. The men had completed 14 years of education (*SD* = 2.81) on average, with two-thirds having had some college education or more. The participants reported earning about $20,200 (*Mdn*). Seventy-five percent of the sample was born outside of the U.S. On average, participants immigrated to the U.S. at around 22 years of age (*SD* = 9.23). Scores on the acculturation scale indicated that participants read, spoke and thought in Spanish over English (*M* = 2.30, *SD* = 1.08).

As presented in Table 2, participants reported having engaged in UAI on average of 11.39 occasions in the previous two months (*SD* = 17.52). Only about nine percent reported that they had not engaged in UAI in the previous two months. Sixty-two percent of the total anal intercourse occasions were unprotected. Seventy percent of the men reported a negative HIV status.

Forty percent of respondents agreed that most people in the NYC area held negative views about gays and bisexuals; 65.2% agreed with this statement in reference to the Latino community. All but 15.9% of the sample reported anti-gay violence and victimization incidents since age 16. Furthermore, in the prior year, only 37.5 % of the sample reported experiencing no incidents. However, only about 20% of the sample attributed personal set-backs to homophobia and about 17% to racism or ethnic prejudice. On the average, participants did not attribute their problems, failures or setbacks to homophobia or racism. Fifty-six

percent of respondents indicated that they intend to use condoms for anal peneration or oral sex every time.

Bivariate Associations

Associations between covariates and variables included in the model, including the outcome variable, were examined to assess potential confounding effects. Older, as compared to younger participants, while less likely to report anti-gay stigma in the Latino community, were more likely to report anti-gay violence and victimization since the age of 16. Older rather than younger participants were also more likely to attribute problems to homophobia and racism. Older participants were more likely to report ever using a greater number of substances (alcohol, marijuana, etc.) as compared to younger participants. Although they reported using substances less frequently in the previous two months, they used substances more frequently before or during anal intercourse than younger participants. Participants with more years of schooling reported more anti-gay stigma in the Latino community, lower depression, and higher self-esteem.

Seventy-four percent of the sample preferred Spanish over English. A higher level of mainstream-acculturation was linked to higher perception of anti-gay stigma in the Latino community, lower intentions to use condoms, increased substance usage, and more frequent occasions of UAI. Only about 15% of the sample slightly agreed or strongly agreed with machismo statements. Participants who agreed with machismo statements were less likely to report anti-gay stigma in the Latino community but were more likely to attribute

problems to homophobia and racism than those low on machismo scores. High machismo was linked to higher depression, lower self-esteem, and the use of more restricted type of substances.

Compared to HIV-negative men, HIV-positive men were less likely to report anti-gay stigma in the Latino community, but more likely to attribute problems to homophobia and racism. Although HIV-positive men reported using substances less frequently in the previous two months, they were more likely to have tried a wider range of substances and to use substances during sexual intercourse more often than HIV-negative men. Based on these significant findings ($p < .05$), age, education, acculturation, machismo, and HIV status were entered in the appropriate analyses to control for their effects.

Pearson correlation coefficients between each model variable, along with means and standard deviations are presented in Table 4. Intercorrelations indicate that the social stress variables (i.e., anti-gay violence) were related to one another (i.e., attributions to homophobia), except for anti-gay stigma, both in NYC and within the Latino community; these variables were only related to each other and were not related to any of the other discrimination variables, including problems attributed to racism. Positive associations were found between depression and all of the social stress variables, except for perceptions of anti-gay stigma in NYC and within the Latino community, indicating that greater social stress related to heterosexism and racism is related to higher scores on the BDI. Negative associations were found between self-esteem with anti-gay stigma in NYC and problems attributed to both homophobia and racism, indicating that

greater social stress is related to lower self-esteem. Self-esteem was also negatively correlated with depression, indicating that individuals who scored lower on self-esteem were more likely to be depressed. Intentions to use condoms was only found to be related to self-esteem. That is, participants who reported greater intent to use condoms scored higher on self-esteem.

With respect to substance use, the total number of substances ever used was positively associated with anti-gay stigma in the Latino community and anti-gay violence and victimization since the age of 16 not including the previous year. Number of substances ever used was negatively correlated with both self-esteem and condom-use intentions. However, participants who reported using substances more frequently in the previous two months, were less likely to attribute personal set-backs and problems to homophobia and racism. Greater likelihood of substance use during anal intercourse in the previous two months was associated with higher scores on the BDI and lower self-esteem.

Multivariate Associations

To establish the hypothesized direct relationship between social stress and UAI, a necessary requirement to test the hypothesized mediational models (e.g., Baron & Kenny, 1986), hypothesis 1 was tested by entering each social stress variable in a Poisson regression predicting UAI while controlling for acculturation and HIV status. Poisson probabilities were used to model the number of occurrences (counts) of an event (i.e., UAI). In this case, the variance was greater than the mean and therefore standard errors were adjusted using a deviance score because data were overdispersed. Table 5 presents the

regression coefficients in predicting UAI, as well as the Pearson Chi-square for the goodness-of-fit of the model. Anti-gay stigma in NYC, anti-gay violence and victimization since age 16 (not including the previous year), and problems attributed to both homophobia and racism significantly predict UAI. Eigenvalues and condition indices were examined to estimate the level of collinearity in the explanatory variables. Condition indices ranged from 1 to 19.96, with a moderate level of collinearity between anti-gay violence and victimization since age 16, problems attributed to homophobia and racism (13.61, 18.03, 19.96, respectively). The condition index for anti-gay stigma in NYC was below 10, indicating that there is low multicollinearity. Severe collinearity is evident if the condition index exceeds 30. To calculate the relative change in UAI incidence rate brought by a one-unit change in one of the independent variables, the coefficient is simply exponentiated. For example, the estimated rate ratio for a one unit increase in perceptions of local stigma is 1.54 UAI occasions, given the other variables are held constant in the model. Thus, for a participant who fully endoresed the anti-gay stigma in NYC statements (i.e., he strongly agreed), the incidence rate ratio of UAI is 5.58. The relative change in UAI occasions due to anti-gay stigma in NYC and violence and victimization incidents since age 16, as well as problems attributed to racism result in an increase. The coefficient for attributing problems and set-backs to homophobia indicates a relative decrease in UAI; however, this is most likely due to multicolinearity between the independent variables.

In order to avoid problems with multicolinearity, factor analysis was

performed on the social stress variables. A single factor was found for anti-gay violence and victimization both in the last year and since age 16, and problems attributed to homophobia and racism. An additional Poisson regression was performed to test the effect of this single factor on UAI. However, the regression revealed that this factor was not significant in predicting UAI (Wald $\chi^2_{(1, 255)} = 1.42$, $p = .23$), after accounting for acculturation and HIV status.

Additionally, to test whether the effects of anti-gay stigma in NYC, anti-gay violence and victimization since age 16 not including the previous year, and problems attributed to homophobia and racism are additive in predicting UAI, interaction terms for the social stress variables that remained significant (Table 5) were introduced in separate Poisson regressions predicting UAI while controlling for acculturation and HIV status. Only the interaction between anti-gay violence and victimization since age 16 and problems attibuted to homophobia was significant in predicting UAI ((Wald χ^2 (1, 251) = 6.482, $p < .05$), indicating that the effect of the number of events in which one was victimized on the number of UAI occasions depends on whether personal set-backs and problems are attritubed to homophobia. As Figure 2 indicates, greater number of anti-gay violence and victimization incidents since age 16, excluding the previous year, was predictive of a greater number of UAI occasions, irrespective of the extent to which problems were attributed to homophobia. UAI was lowest for those who were likely to have experienced fewer victimization incidents and less likely to attribute their problems and setbacks to homophobia. However, UAI was higher for individuals who were more likely to attribute their problems to homophobia

even though they reported fewer anti-gay violence and victimization incidents since age 16, excluding the previous year.

To test Hypothesis 2, several multiple linear regressions were performed to test the associations between the social stress variables that were found to predict UAI (anti-gay stigma in NYC, anti-gay violence and victimization since age 16 not including the previous year, and problems attributed to homophobia and racism), with psychological distress (depression and self-esteem), substance use (number of substances used, frequency of use in the previous two months, and frequency of use concurrent with anal intercourse in the previous two months), and condom-use intentions. Results of the analyses are presented in Table 6.

After accounting for years of education and machismo, the number of anti-gay violence and victimization incidents experienced since age 16 and attributing problems to racism were found to be significant predictors of depression. Low self-esteem was found to be predicted by anti-gay stigma in NYC and problems attributed to racism (this coefficient was only marginally significant). Only a small proportion of variance was accounted for by social stress in predicting depression and self-esteem. As reported earlier using the Pearson correlation coefficients, none of the social stress variables were significantly related to condom-use intentions.

With regard to substance use, anti-gay violence and victimization since age 16 not including the previous year and problems attributed to homophobia predicted the number of substances ever used, after controlling for age,

acculturation, machismo, and HIV status. Problems attributed to homophobia was only marginally significant in predicting frequency of substance use in the previous two months, after controlling for age and HIV status and only a small proportion of variance was accounted for by social stress. Similarly, only a small proportion of variance was accounted for by social stress in predicting frequency of substance use concurrent with sex. Age and HIV status accounted for 6% of the total variance (8%) explained in this analysis.

Hypothesis 3 that psychological distress is associated with condom-use intentions was tested using a multiple linear regression. As presented in Table 7, only self-esteem was found to significantly predict condom-use intentions after controlling for acculturation. That is, participants who reported higher self-esteem were likely to report greater intentions to use condoms.

Hypotheses 4 and 5 were tested using separate Poisson regressions. Coefficients are presented in Table 8. Depression was found to be significant with a rate ratio for UAI occasions expected to decrease by a factor of 0.95, while holding all other variables in the model constant. However, a squared term to test for a curvilinear relationship between BDI and UAI occasions was also found to be significant. A scatter plot is depicted in Figure 3 and indicates that sexual risk may be highest for those with low or high levels of depression, contrary to Crepaz and Marks proposition of an inverted U whereby sexual risk is thought to be highest for those with moderate levels of depression. In a separate regression, intent to use condoms was also found to be significant, as expected, with an estimated rate ratio of .73 (a decrease in UAI occasions).

According to the conceptual model, three mediational hypotheses were postulated. First, there was no evidence for hypothesis 6 that psychological distress mediates the relation between social stress and condom-use intentions since variations in the social stress variables did not significantly account for variation in the outcome variable (condom-use intentions in this case). Linkages between the independent variables with the mediator and dependent variables, as well as a relationship between the mediator and dependent variable are necessary in testing a mediation model (Baron & Kenny, 1986). Similarly, no evidence was found for Hypotheses 7 and 8 that intent to use condoms mediates the association between social stress and UAI and the association between psychological distress and UAI. Condom-use intentions was related to one of the psychological distress variables, self-esteem, but there was no evidence of a direct relation between self-esteem and UAI. Evidence for an indirect path was observed, mainly that social stress (anti-gay stigma in NYC and problems attributed to racism) leads to lower self-esteem and in turn to lower condom-use intentions, which in turn leads to more UAI occasions.

As shown in Table 9, independent effects of anti-gay violence and victimization since age 16 and problems attributed to homophobia were found to be significant when regressing UAI on social stress and condom-use intentions. Similarly, depression remained significant when regressing UAI on condom-use intentions and depression (refer to Table 10).

Although not postulated since all paths to UAI were hypothesized to be explained by condom-use intentions, depression was found to mediate the

relation between social stress and UAI. A Poisson regression was performed regressing UAI on the depression and the social stress variables that were found to significantly predict UAI (anti-gay stigma in NYC, anti-gay violence and victimization since age 16, and problems attributed to homophobia and racism) while controlling for acculturation and HIV status. Eigenvalues and condition indices were examined to estimate the level of collinearity in the explanatory variables. Condition indices when the mediator depression was included in the regression ranged from 1 to 18.33, with a moderate level of collinearity for problems attributed to racism. Collinearity tolerance levels were greater than .40 and Variance Inflation was less than 2.5. As presented in Table 11, depression was found to mediate the relations between stigma in NYC and problems attributed to racism with UAI.

Lastly, to test Hypothesis 9, that substance use (particularly when concurrent with sex) will moderate the effect of condom-use intentions on UAI, interaction terms were introduced in separate Poisson regressions. First, the number of substances ever used, frequency of use in the previous two months, and frequency of use concurrent with sex were entered simultaneously in Poisson regression, while controlling for acculturation and HIV status. Substance use before or during anal intercourse significantly predicted UAI over and above number of substances ever used and frequency of use in the previous two months. Interaction terms were then computed and entered in separate Poisson regressions predicting UAI while controlling for acculturation and HIV status.

As indicated in Table 12, a Wald test for the estimate of the interaction

term between number of substances ever used and condom-use intentions was non-significant (Wald χ^2 = .71, p = .40). The interaction term between substance use frequency in the previous two months and condom-use intentions was significant, indicating that the effect of condom-use intentions on number of UAI occasions depends on the frequency of alcohol or drug use in the previous two months. As Figure 4 indicates, greater intentions to use condoms was predictive of fewer number of UAI occasions, irrespective of how often alcohol or drugs were used the previous two months. UAI was higher for those who indicated lower intent to use condoms and who reported using substances less frequently in the previous two months. However, UAI was highest for individuals with low intentions to use condoms and who used substances more frequently in the previous two months. Similarly, the interaction term between substance use concurrent with sex and intent to use condoms was significant; that is, more frequent substance use before or during sexual intercourse was predictive of a greater number of UAI occasions among those who reported low intentions to use condoms.

To summarize, statistical analyses provided evidence for three paths to UAI: 1) a direct path between social stress and sexual risk behavior (anti-gay violence and victimization since age 16 not including the previous year and problems attributed to homophobia with UAI); 2) an indirect path between anti-gay stigma in NYC and problems attributed to racism with UAI through self-esteem and condom-use intentions; and 3) an indirect path between anti-gay violence and victimization since age 16 and UAI through depression. The effects

of anti-gay stigma in NYC and problems attributed to racism on UAI were mediated by depression. Lastly, the effect of condom-use intentions on UAI was shown to depend on frequency of substance in the previous two months, and particularly use concurrent with sexual intercourse.

Chapter Four: Discussion

Restatement of Study Aim and Hypotheses

HIV continues to affect ethnic minority MSM disproportionaltely. In a recent review by Herbst et al (2006) of controlled trials of behavioral interventions in the US and Puerto Rico, only 11 studies focused exclusively on Latinos, 5 comprised of Latinos as the majority of participants, and 4 included Latinos as a subsample. The alarming fact is that of these, only one intervention focused on Latino MSM and therefore it is crucial to examine factors that are linked to sexual risk behaviors among Latino MSM to inform HIV prevention interventions. This study aimed to examine a model linking sexual risk behaviors to social stress resulting from racism and heterosexism, psychological distress, condom-use intentions, and substance use. The goals were to test the extent to which experiences of discrimination based on racism and heterosexism lead to higher psychological distress and substance use, in turn disrupting decisions about and intentions to use condoms, and resulting in UAI. Findings in relation to the hypotheses are discussed, followed by a discussion of the study limitations as well as implications for prevention efforts.

The study examined a series of research hypotheses.

Hypothesis 1: Social stress is associated with UAI.

Hypothesis 2: Social stress is associated with psychological distress, substance use, and condom use intentions.

Hypothesis 3: Psychological distress is associated with condom-use intentions.

Hypothesis 4: Psychological distress is associated with UAI.

Hypothesis 5: Intent to use condoms is associated with UAI.

Hypothesis 6: Psychological distress mediates the relation between social stress and condom use intentions.

Hypothesis 7: Condom use intentions mediates the association between social stress and UAI.

Hypothesis 8: Condom use intentions mediates the association between psychological distress and UAI.

Hypothesis 9: Substance use (particularly when concurrent with sex) will moderate the effect of condom use intentions on UAI.

Study Findings

Sexual Behavior.

On average in the previous two-month period prior to enrolling in the study, participants engaged in about 11 anal intercourse occasions in which a condom was not used. The unprotected occasions made up 62% of the total anal intercourse occasions among this sample. Only about 9% of the sample used condoms on all occasions in the previous two months. However, this result reflects the sample composition due to eligibility criteria for participation in the parent study. To be eligibile participants had to have engaged in UAI at least once in the past two months prior to screening.

Social Stress.

An overwhelming majority of the sample reported some social stress due to heterosexism or racism. When asked about people's attitudes about gays and bisexuals, 40% and 65% of respondents agreed that most people in the NYC area and in the Latino community, respectively, viewed gays or bisexuals negatively. Participants reported being victims of many incidents because someone presumed they were gay. These ranged from experiences of verbal insults, to being spat on, being threatened with physical violence, having personal property damaged, to being physically assaulted. Only about 16% of the sample reported no incidents since age 16 and a little over 37% reported no incidents in the previous year. Participants reported an average of nearly 90 incidents since the age of 16, not including the previous year. In the previous year, they reported seven incidents on average. However, only about 20% of the sample attributed personal set-backs to homophobia and about 17% to racism or ethnic prejudice. On average, participants did not attribute their problems, failures or setbacks to homophobia or racism.

Psychological Distress.

Although many of the participants in this study had experienced some form of social stress due to heterosexism and/or racism, they did not show signs of psychological distress. Using cut-off scores provided by Beck, Steer and Brown (1996), the average score on the BDI indicated none or minimal depression in this sample. Participants scored high on the Rosenberg self-esteem scale.

Condom-use intentions.

The majority of respondents indicated that they intend to use condoms for anal penetration or oral sex every time. According to the theory of reasoned action (Ajzen & Fishbein, 1980; Albarracin, Johnson, Fishbein, & Muellerleile 2001), performing or engaging in a behavior is a direct function of a person's willingness or intent to engage in that behavior. Intention to engage in a behavior is determined by an individual's attitudes toward that behavior, relevant others' beliefs about the behavior, affective states toward performing the behavior, and one's sense of efficacy in actually performing the behavior (Ajzen & Fishbein, 1980).

Substance use.

Participants in this study reported using just over three substances on average: alcohol, marijuana, poppers, and cocaine. Ninety-seven percent of the sample reported using alcohol. With regard to frequency of use in the previous two months, the overwhelming majority reported using substances about once a month or less. Similarly, the majority used substances once a month or less before or during sexual intercourse.

HIV Status.

Nearly one-third of the sample was HIV-positive. Associations between seropositivity with condom-use intentions and UAI did not reach statistical significance at the bivariate level. HIV-positive men were more likely to attribute their problems and set-backs to homophobia and racism but were less likely to report anti-gay stigma in the Latino community. They also reported trying more

substances than HIV-negative men, although they used alcohol or drugs less frequently in the previous two months. However, HIV-positive men were more likely to report using substances more frequently before or during anal intercourse.

Acculturation.

Although Latinos make up a diverse group with various nationalities and backgrounds, they share traditional cultural values and beliefs. Acculturation to the mainstream US culture may play a significant role in men's sexual behavior determining what is appropriate in various niches. The majority of the men in this study were not highly acculturated to the US culture, with three-quarters being born outside of the US and immigrating during their twenties. In this study, evidence that acculturation to the mainstream culture is optimal for the men was not found. In fact, quite the opposite, acculturation was linked to lower intetions to use condoms and more UAI occasions, and usage of a greater number of different types of substances.

Machismo.

Similarly, traditional gender roles may play a key role in sexual risk behavior (Díaz, 1998). In this study, only about 15% agreed or slightly agreed with machismo statements. Machismo was not related to UAI but evidence for indirect pathways to sexual risk behavior was observed. Men who scored higher on machismo were more likely to attribute their set-backs to homophobia and racism, to be depressed and report lower self-esteem, and to try a greater number of substances. However, they were less likely to report anti-gay stigma

in the Latino Community.

It is important to note that the aim of this study has not been to compare the detrimental impacts different sources of oppression have on MSM whether from ingroup ethnic communities, within the larger mainstream gay community, or even society at large, but rather to understand the larger or "dominant culture" about homosexuality, as Cantú (2000) called for, and its impact on Latino MSM. White MSM experience social stress on the basis of their sexual orientation, and this work on racism and heterosexism was meant to emphasize the ways in which ethnic minority MSM's experiences are compounded by additional sources of oppression as compared to the experiences of white MSM.

Evidence for study hypotheses.

Hypothesis 1: Social stress is associated with UAI. The results indicate that social stress, mainly experiences of prejudice and discrimination based on sexual orientation and ethnic group membership is directly linked to sexual risk. Four of the six social stress variables measured in this study were significantly associated with UAI. These findings are consistent with results reported by Díaz, Ayala and Bein (2004) of a study with Latino gay men. Their study found that negative experiences due to heterosexism and racism, including verbal and physical assaults as children and adults, were related to higher sexual risk. Although sexual risk was operationalized as low versus high sexual risk based on whether the men were engaging in UAI with non-monogamous partners ("a casual partner or with a lover/boyfriend with whom they did not have a monogamous arrangement" p. 259) at the time they participated in the study, UAI

is considered the riskiest type of sexual behavior for HIV transmission among MSM. In this study, participants who reported greater social stress were likely to report more UAI occasions than those who did not, with the exception of attributing problems and set-backs to homophobia. However, this is likely due to multicolinearity between the independent variables.

However, a significant interaction indicated that the effects of the social stress variables on UAI are not simply cumulative. The effect of experiences of anti-gay violence and victimization since age 16 on UAI was affected by the extent to which men attributed problems and set-backs to homophobia. Furthermore, findings in this study indicate that anti-gay stigma in the Latino community and anti-gay violence and victimization in the last year did not have additional predictive or explanatory power over and above the other social stress variables. This indicates that behavioral interventions aimed at the individual level should be prepared to address at a minimum the four dimensions of social stress that were found to be significant.

Hypothesis 2: Social stress is associated with psychological distress, substance use, and condom use intentions. This study's findings indicate that social stress is related to psychological distress and substance use, specifically the number of substances ever used, but not related to intentions to use condoms for anal or oral sex. Being victims of anti-gay violence incidents since adolescence and perceiving stigma related to one's sexual orientation, as well as perceiving that racism has had a negative impact in one's life, may lead to psychological distress. These findings are consistent with other findings of

studies examining the effects of racial prejudice and discrimination (Williams, Neighbors, & Jackson, 2003; Williams & Williams-Morris, 2000) or the effects of prejudice and discrimination on the basis of one's sexual orientation (Herek, Gillis, & Cogan, 1999; Mays and Cochran, 2001; Meyer, 1995), and particularly among ethnic minority MSM (Díaz, Ayala, & Bein, 2004; Díaz, Ayala, Bein, Henne, & Marin, 2001; Peterson, Folkman, & Bakeman, 1996; Stokes & Peterson, 1998). For example, Herek, Gillis and Cogan (1999) found that psychological distress was greater among people who had experienced hate crimes based on sexual orientation during their adolescence.

It is important to note that different dimensions of social stress may impact indicators of psychological distress differentially. In this study, participants were likely to score higher on the BDI, if they had experienced more anti-gay violence incidents since they were 16 years of age, excluding the previous year, and if they were more likely to report that racism had a negative impact on their lives. Comparatively, low self-esteem was reported by participants who were more likely to perceive anti-gay stigma in the NYC area. Perceptions that others view gay men negatively, or with low regard or esteem may have a direct impact on how individuals view themselves and therefore feelings of a sense of worth. It is important that future research identify the various dimensions of the social stress construct to systematically measure and examine what the individual effects these have on various indicators of psychological distress, including at different stages across the lifespan.

In this study, it was hypothesized that social stress is associated with use

of alcohol and drugs. As was posited by McKirnan, Vanable, Ostrow, and Hope (2001), MSM may use alcohol and drugs to try to cope with stress. Tests of the associations between substance use and each social stress variable revealed that participants who reported more anti-gay violence and victimization incidents were more likely to report use of various types of substances than men who reported fewer incidents. However, attributing problems to homophobia was related to use of fewer substances. As was mentioned previously, being aware of society's negative attitudes toward homosexuality and how they impact one's life may make individuals more vigilant about protecting themselves. Social stress was not related to frequency of use in the previous two months, including use before or during sexual intercourse.

Similarly, social stress was not related to condom-use intentions. According to the theory of reasoned action, intention to engage in a behavior is determined by an individual's attitudes toward that behavior, relevant others' beliefs about the behavior, affective states toward performing the behavior, and one's sense of efficacy in actually performing the behavior (Ajzen & Fishbein, 1980).

Hypothesis 3: Psychological distress is associated with condom-use intentions. Only one of the two psychological distress indicators was significantly associated to condom-use intentions. Participants with higher self-esteem reported greater intentions to use condoms for anal or oral sex than those with lower self-esteem.

Hypothesis 4: Psychological distress is associated with UAI. A curvilinear

relationship between depression and UAI was found. Díaz, Ayala, and Bein (2004) reported that depression was related to increased sexual risk. Crepaz and Marks (2001), after conducting a meta-analysis to examine effect sizes for the association, concluded that an inverted U may best describe the relationship between depression and sexual risk, whereby sexual risk was thought to be highest for those with moderate levels of depression. This study, however, showed that sexual risk may be highest for those with low or high levels of depression.

Hypothesis 5: Intent to use condoms is associated with UAI. In line with the theroy of reasoned action (Ajzen & Fishbein, 1980), a strong association was found between intent to use condoms and UAI. Participants who reported lower intentions to use condoms during anal or oral intercourse reported engaging in a greater number of UAI occasions.

Hypothesis 6: Psychological distress mediates the relation between social stress and condom use intentions. Hypothesis 7: Condom use intentions mediates the association between social stress and UAI. Hypothesis 8: Condom use intentions mediates the association between psychological distress and UAI. Although three mediational models were proposed, evidence for linkages between the indepent, proposed mediators, and dependent variables was not found. To test for mediation, the necessary relationships between these variables need to be established (Baron & Kenny, 1986). Although not postulated in this study because all direct association with UAI were thought to be explained by condom-use intentions, a test of a mediational model with

depression as the mediator showed that depression accounts for the relations between anti-gay stigma in NYC and problems related to racism with UAI. Evidence that anti-gay violence and victimization since age 16 not including the previous year, attributing problems and set-backs to homophobia, depression and condom-use intentions contributed independently to UAI was found.

Furthermore, evidence for an indirect path between social stress and UAI through psychological distress and condom-use intentions was found. Being aware of negative attitudes held by others about homosexuality and having had problems because of racism may have a negative impact on self-esteem. Lower self-esteem may disrupt decisions and willingness to use condoms during anal intercourse and this in turn may lead to lack of actual condom use. These findings lend support to Díaz's model in which oppression is thought to lead to psychological distress in Latino MSM, making safe sex problematic. Díaz and colleagues found that psychological distress resulting from negative experiences due to racism and heterosexism leads one to participate in situations that make it difficult to engage in safe sex practices, even though intentions to use condoms may be high.

However, other factors may play a key role in intentions to use condoms. As pointed out previously, intention to engage in a behavior is mainly a function of an individual's attitudes toward that behavior, beliefs about the behavior held by others who are important to the individual, affective states toward performing the behavior, and one's sense of efficacy in actually performing the behavior (Ajzen & Fishbein, 1980). Among Latino MSM, specifically Puerto Rican men in

the NYC area, Carballo-Diéguez and Dolezal (1996) found using open-ended questions and probes that although many MSM in their sample were knowledgable about the benefits of condom use, participants disliked condoms and reported that trust and emotions (a sense of intimacy) with partners took priority over condom use. A more comprehensive model may be necessary to elucidate underlying processes that lead to sexual risk behavior.

Hypothesis 9: Substance use (particularly when concurrent with sex) will moderate the effect of condom use intentions on UAI. In this study, greater likelihood for condom use was found for those who reported greater intentions to use condoms irrespecitve of alcohol or drug use in the previous two months generally or whether use was concurrent with sex. Although an association between substance use and UAI was found, consistent with findings by Diaz and colleagues (2004), this study found that UAI was more frequent among those who reported lower intentions to use condoms and more frequent substance use. However, an event-level analysis may be best at determining a relationship between substance use and subsequent sexual risk behaviors. For example, Leigh conducted a meta-analysis of studies with adolescents and adults to examine the relationship between alcohol and condom use using an event-level analysis. Although Leigh found that among adults, alcohol use was not related to use of condoms, she found that use of other substances in conjuction with alcohol was indeed related to lower use of condoms. Furthermore, Colfax et al. (2004) using a probability sample of 4,295 HIV-negative MSM recruited in in six US cities (Boston, Massachusetts; Chicago, Illinois; Denver, Colorado; New York

City, New York; San Francisco, California; and Seattle, Washington) found through use of event-level analysis that consuming six or more alcoholic drinks or use of poppers, amphetamines or cocaine concurrent with sexual intercourse was associated with UAI, after controlling for participant and sex partner characteristics, and participants' tendencies to use substances.

Establishing a causal link between substance use and high-risk sex is difficult, but Colfax et al. (2005) were able to examine substance use and subsequent sexual behavior longitudinally using a subsample of MSM who were enrolled in the EXPLORE study over a period of up to 48 months. Based on longitudinal data from 736 MSM in San Francisco, the authors found that UAI was higher during times of increased substance use. Colfax and colleagues concluded that "to reduce and prevent risks of HIV, no level of use of these drugs should be considered 'safe'" (p. 68). These findings along with results in this study point to the importance of examining the interplay between substance use and condom-use intentions on UAI longitudianlly to better inform HIV prevention interventions that target MSM.

Study Limitations

Although this study along with the work of Díaz and colleagues (2004) provide evidence for the hypothesized relations, there are five limitations with this secondary data analysis: 1) the model tested in this study does not include other factors that could potentially buffer the effects of social stress; 2) measurement issues; 3) data analysis techniques used in this study; 4) cross-sectional nature of data set; and 5) generalizability.

First, individual and collective or organized resistance, effective coping, social support and resilience are important components that were not part of the proposed model. Factors that play a role in attenuating associations between experiences of discrimination and psychological distress, substance use, and sexual risk behaviors are important and have been examined by researchers (e.g., Díaz, Ayala, Bein, Henne, & Marin, 2001; O'Donnell, Agronick, San Doval, Duran, Myint-U & Stueve, 2002; Ramirez-Valles, Fergus, Reisen, Poppen & Zea, 2005). Family and peer support, family acceptance, life satisfaction, community involvement with referent social group (i.e., gay community and ethnic community attachments, Crawford, et al., 2002; as well as sexual identity and coming-out, Rosario, et al., 2006) are factors that may help individuals who have experienced discrimination cope in successful ways. This model, similarly to stress models in study the imapct of HIV infection and AIDS as pointed out by Ouellette (1998), does not take advantage of all of the available data on gay men in the US. Ouellette makes a powerful point about carefully examining models and their basic elements to avoid oversimplifying and losing the voices and lived experiences of people.

Although the focus of this study was to explain a process through which social stress due to sexual orientation and ethnic group membership has on MSM, this work should not imply that experiences by members of any group are devoid of individual and collective or organized resistance, effective coping, reliable support and exemplary resilience. Indeed, there are pockets of resistance (Cantú, 2000) in MSM's daily lives. Rodriguez and Ouellette (2000)

examined the positive role that religion has had in some MSM's lives and showed how they integrated their gay and religious identities. In their study, men reported feeling incomplete without the "divine love" and it is through spirituality that they were able to integrate their gay and religious identities.

The second limitation has to do with measurement issues and two points need to be raised regarding our assessments. First, only one measure of experiences of racism was available in the existing data set. A more comprehensive measures of experiences of racism that taps both the internal and external nature of minority stress could contribute to meaningful associations. For example, Landrine and Klonoff's (1996) Schedule of Racist Events (SRE) is a self-reported inventory that assesses experiences of prejudice and discrimination due to racism in the past year as well as lifetime, and the extent to which individuals appraise the events as stressful. This inventory consists of 18 items (e.g., "How many times have you been treated unfairly by your employers, bosses or supervisors because you are Black?"). Although this study included various dimensions of social stress due to heterosexism, including more assessments of ethnic prejudice and discrimination would have been beneficial in measuring a more comprehensive social stress construct.

The second point has to do with a more general issue around measurement scales. Kalichman and Weinhardt (2001) discussed methodological problems in examining associations between psychological distress and sexual risk behavior, particularly depression, in that questionnaires do not coincide with the time frame in which participants are asked about their

sexual practices. For example, the questionnaire used to assess depression in this study measured recent states (past two weeks) and does not coincide with the time frame used in the sexual practices assessment (past two months).

Measurement error is key in the use of multiple regression to test a mediational model (Baron & Kenny, 1986). According to Fenton, Johnson, McManus, and Erens (2001), the challenge is to minimize error that is introduced by participant-selection bias and self-reports, including problems with recall or disclosure of sensitive issues and/or behaviors. One of the assumptions in testing a mediational model is that there be no measurement error. According to Baron and Kenny (1986), the effect of measurement error tends to produce an underestimate of the effect of the mediator and an overestimate of the effect of the independent variable on a dependent variable. The use of numerous variables as indicators of a construct (i.e., social stress) helps to deal with the issue of measurement error.

Moreover, according to Baron and Kenny (1986) structural model techniques are best at examining latent variables or constructs, allowing one to test all of the relevant paths directly while accounting for measurement error and correlations between the constructs. Another study limitation is that structural equation modeling was not used in this study. This analytic technique would have provided many advantages in the analysis.

The fourth limitation has to do with interpretations based on the cross-sectional nature of the data set used in this study. Causal interpretations will not be possible. A longitudinal study would be superior at determining which

variables temporally precede the other variables. Rosario, Schrimshaw, Hunter and Gwadz (2002) call attention to studying processes that clarify the direction of the relations among these constructs. Although Díaz, Ayala, and Bein's (2001) work support a similar model to our proposed model, the relationships need to be explored longitudinally to determine how the constructs influence each other over time and how these influence subsequent sexual behavior. Longitudinal data may aid in identifying processes or mechanisms through which victimization (i.e., experiences of violence or discrimination because one is presumed to be gay or based on ethnic group membership) directly impacts on sexual risk. Future research needs to consider how constructs under study influence each other over time.

The last limitation has to do with generalizability. Given the nonprobabilistic sample from which data were analyzed, the findings resulting from this secondary data analysis do not allow generalizations to be made to Latino MSM in general.

Implications

Even with these limitations, the proposed study could have important implications for preventing HIV infection not only for Latino MSM, but also other ethnic minority MSM. Results from this study, and as other researchers have also contended, can point to how societal factors need to be changed. To quote Díaz and colleagues,

> First and foremost, it must be clear that denouncing, resisting, and abolishing discriminatory practices are a clear path toward a more

> just and healthy society, and perhaps the most important tool to fight diseases like AIDS that breed on social injustice, prejudice, and inequality. (Díaz, Ayala and Bein, 2004, pp. 265-266)

Results from this study may aid in behavioral intervention designs by suggesting important components that need to be incorporated that could potentially help individuals effectively cope with racism and heterosexism. The work of Zimmerman, Ramirez-Valles, Suarez, de la Rosa and Castro (1997), Díaz (1998), Ramirez-Valles and Brown (2003), and Carballo-Diéguez, Dolezal, Leu, Niees, Diaz, Decena, and Balan (2005) with Latino MSM point to the importance of designing culturally sensitive and appropriate interventions that aim to not only empower men, as described by Díaz and colleagues (2004), by raising awareness and understanding about larger socio-cultural problems so that men are equipped to deal with sexual and ethnic prejudice and discrimination but also to bring people together based on the idea that community involvement may increase safe sex through peer norms.

In addition to prevention efforts at the individual level, targeting components in this study for interventions aimed at a community level may also be important. According to Kelly (1999), community-level HIV prevention efforts are needed since one-on-one interventions, such as counseling or small-group risk reduction interventions, alone will not be able to reach the population at large as would community-level interventions. Research has shown that men who engage in high risk behaviors are least likely to attend interventions aimed at preventing HIV infection and to complete all intervention sessions (Kalichman,

Roffman, Picciano, & Bolan, 1998). Furthermore, there is some evidence that ethnic minority individuals may be less motivated to attend prevention efforts and/or receive prevention messages (Airhihenbuwa, 1992). The Mpowerment and Community PROMISE are two projects that utilize community members to facilitate and implement the interventions with MSM.

The Mpowerment Project (Kegeles, Hays, & Coates, 1996) is a community building program designed to reduce the frequency of unprotected anal intercourse among gay and bisexual men based on similar others or peer influence. The project is designed and carried out by a group of 10-15 gay men from the community. The project relies on formal and informal outreach, and conducting publicity campaigns in the community. Young men go out to locations frequented by gay men to discuss and distribute safe sex information and condoms. The project also leads social events in the community at which safe sex is promoted. Two to three hour peer-led meetings offer individuals information and discussions about factors that contribute to unsafe sex and skills building exercises, such as using a condom correctly and safe sex negotiation. The Mpowerment Project was chosen by CDC for its compendium of effective interventions for showing that men who participated in this project reduced their frequency of unprotected anal intercourse significantly more than the men in the comparison community. However, of their 300 participants, only 4% were African American, 6 % Latino, and 7 % Asian or Pacific Islander.

Community PROMISE (Peers Reaching Out and Modeling Intervention Strategeies for HIV/AIDS Risk Reduction) is a community-level intervention

derived from the AIDS Community Demonstration Projects (CDC AIDS Community Demonstration Projects Research Group, 1999), which was also selected for CDC's compendium of effective interventions. The Demonstration Projects evaluated the results of a five-city trial to assess the effects of a community-level intervention over three years for underserved populations at risk for HIV infection. The populations targeted were MSM's, active drug users, female sex partners of male injection drug users, female commercial sex workers, youth in high-risk situations, and residents of areas where sexually transmitted infection rates were high. Individuals from the at-risk communities are recruited and trained to be advocates and to distribute information about risk reduction for that specific targeted group (e.g., MSM). Small media materials (newsletters, pamphlets) containing prevention messages in the form of role model stories were distributed. Trained members were mobilized to distribute and reinforce prevention materials and messages among their peers. Condoms and bleach kits were also made available. Across the different target populations, 54% were African American, 19% were Latino, 22% were white, and 5% were of other ethnic groups. The results indicated that individuals in the intervention communities were more likely to use condoms consistently with main and non-main partners and were also more likely to carry condoms than individuals in the comparison communities. They also showed to have a higher stage of change score for condom use.

Community-level prevention efforts could benefit from incorporating issues of sexual and ethnic prejudice and discrimination. Changes in social structures

and policies that can nourish and maintain preventive practices are desperately needed (Kelly, 1999). Kelly indicated that there are many possible signs of an "AIDS safety community," for example, "the number, quality, funding levels, and performance of effective HIV prevention programs being undertaken by service providers in a community; ease of access to HIV testing and condoms; the availability of quick-entry, high-quality HIV health care, secondary prevention case management, and substance use treatment services; and public policies that facilitate the success of HIV prevention efforts" (p. 300). Research studies like this one can point to societal problems and the impact these have on individuals to institute change. As Díaz and colleagues have suggested, research must continue to examine larger social factors that are important in understanding not only underlying processes but also situational and contextual factors that lead to sexual risk behaviors, which may ultimate lead to HIV infection.

Figure 1. Pathways to Sexual Risk Behaviors: The Roles of Social Stress, Psychological Distress, and Substance Use

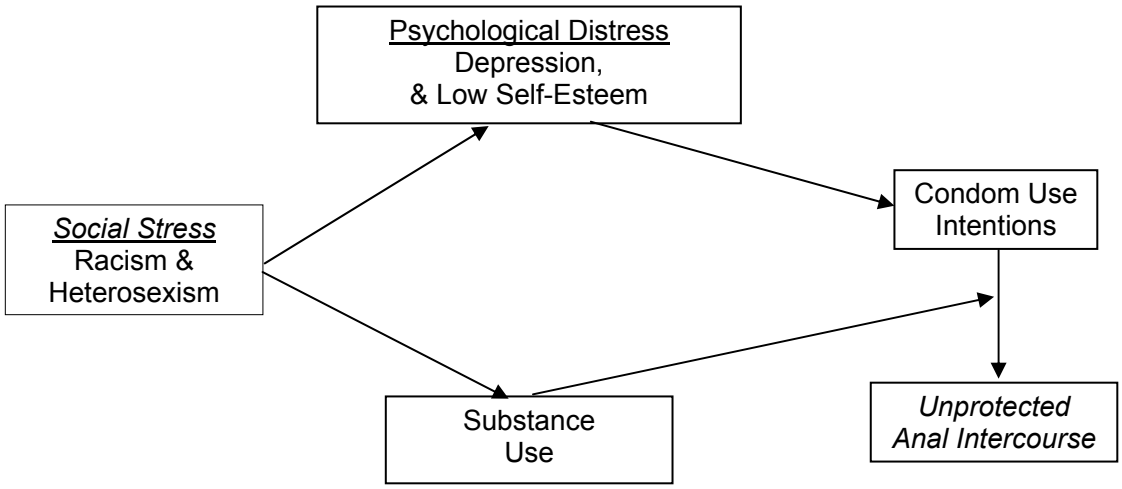

Figure 2. Moderating Effect of Problems Attributed to Homophobia on Average Number of Anti-gay Violence and Victimization Incidents since Age 16 (excluding previous year) and UAI

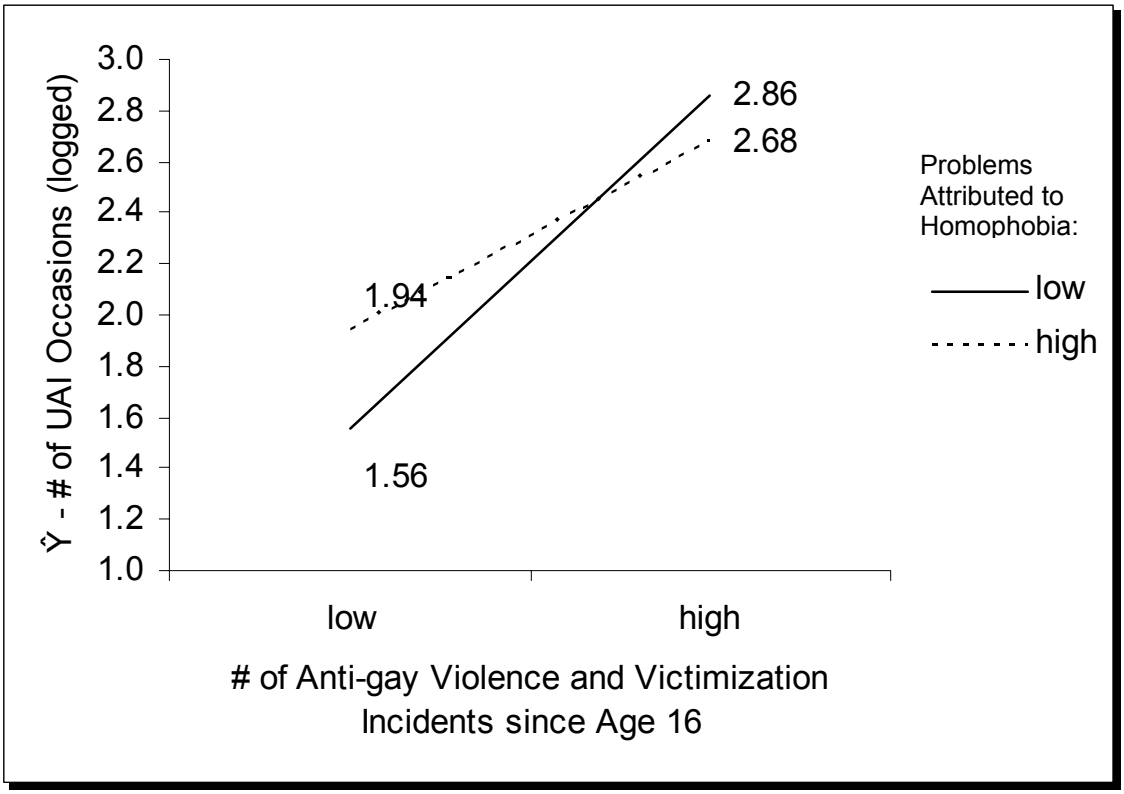

Figure 3. Scores on the BDI and Number of UAI Occasions.

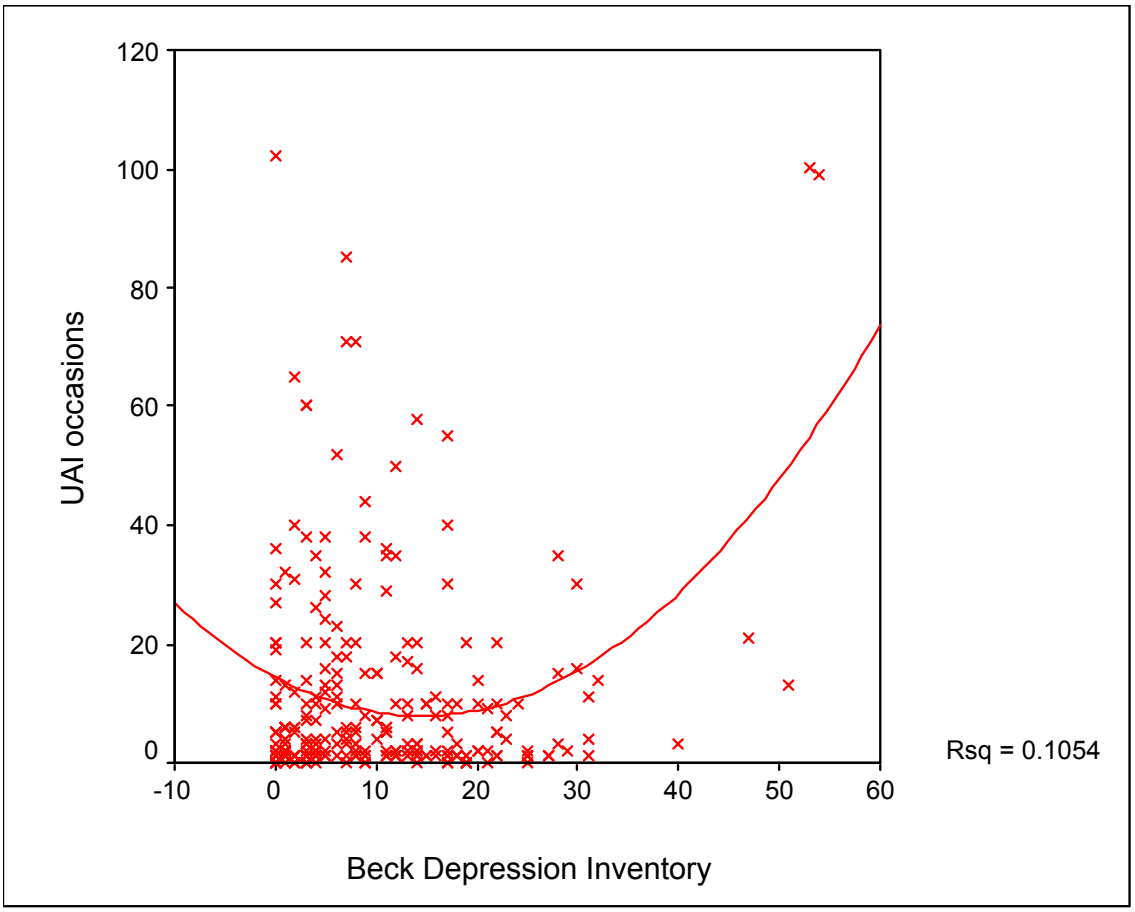

Figure 4. Moderating Effect of Substance-use Frequency in the Previous Two Months on the Condom-use Intentions and UAI

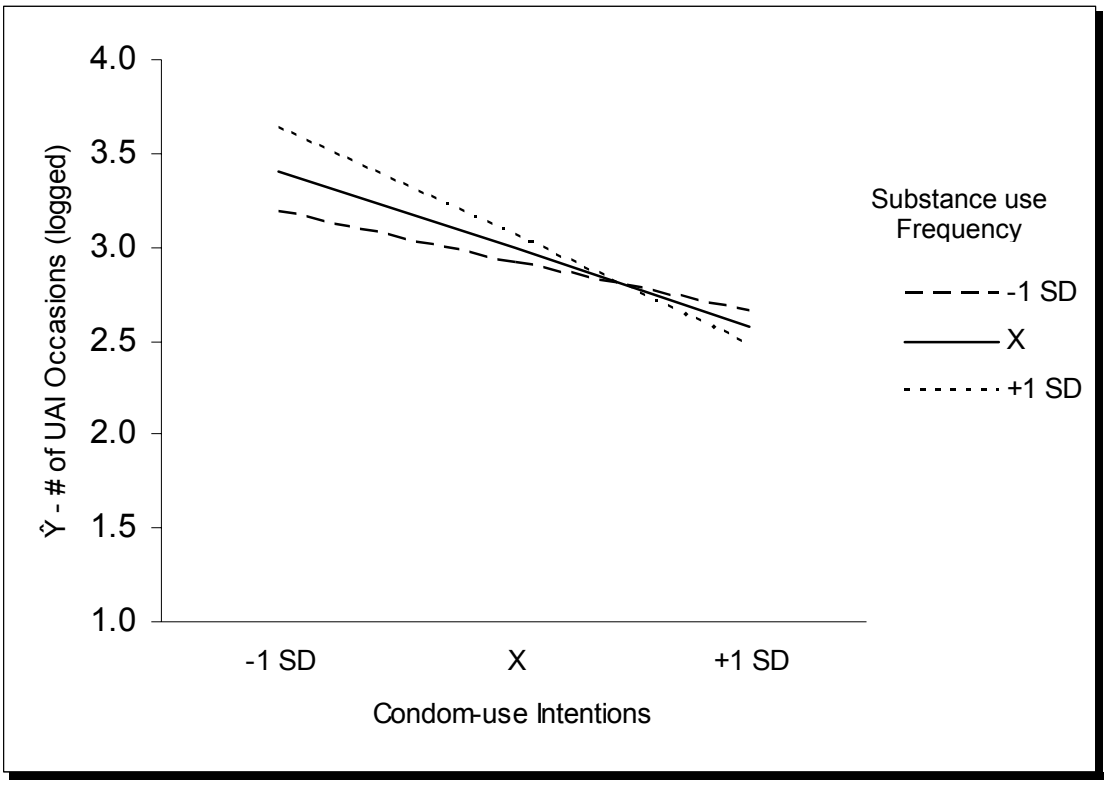

Figure 5. Moderating Effect of Substance-use Frequency Concurrent with Sexual Intercourse in the Previous Two Months on the Condom-use Intentions and UAI

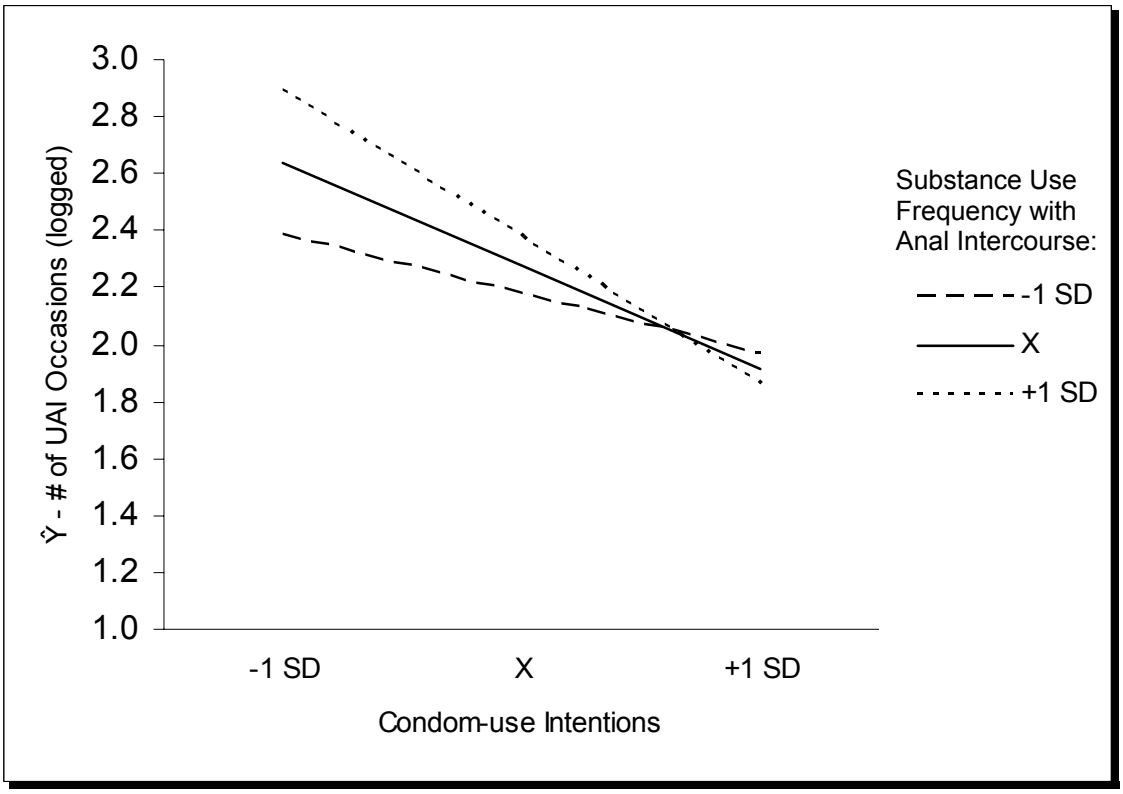

Table 1. Comparisons between Men with a History of Exchanging Sex vs. Overall Sample

	Did not exchange sex	Exchanged sex		
	M (*SD*)	*M* (*SD*)	*t*	95% *CI*
1. Anti-gay stigma in NYC	2.35 (.44)	2.56 (.52)	2.60	-.37 – -.05
2. Anti-gay stigma in Latino community	2.70 (.54)	2.89 (.62)	1.86	-.38 – .01
3. Anti-gay violence and victimization in the last year[a]	.84 (1.52)	2.69 (1.73)	6.66*	-2.40 – -1.30
4. Anti-gay violence and victimization since age 16 excluding last year[a]	2.50 (2.15)	3.88 (1.87)	3.60*	-2.20 – -.63
5. Problems attributed to homophobia	1.84 (.71)	2.09 (.83)	1.94	-.51 – .00
6. Problems attributed to racism[a]	.81 (.29)	.89 (.31)	1.61	-.19 – .02
Psychological Distress				
7. Depression[a]	1.86 (1.19)	2.32 (1.07)	2.19	-.88 – -.04
8. Self-esteem	2.33 (.45)	2.06 (35)	2.19	.02 – .32
Substance use				
9. Total ever[a]	1.16 (.64)	1.28 (.64)	1.04	-.35 – .11

	Did not exchange sex	Exchanged sex		
	M (*SD*)	*M* (*SD*)	*t*	95% *CI*
10. Frequency in the past 2 months[a]	.52 (.54)	.78 (.43)	2.46	-.43 – -.05
11. Concurrent with Sex[a]	.28 (.70)	.64 (.71)	2.76*	-.62 – -.10
12. Condom-use Intentions	3.87 (1.37)	3.95 (1.10)	.33	-.56 – .40
13. # of UAI Occasions[a]	1.55 (1.39)	1.59 (1.46)	.14	-.53 – .46

Note. [a] Data were positively skewed and log transformations were performed.

* $p < .01$

Table 2. Prevalence of Sexual Behavior and HIV Infection (*n* = 264).

	M	*SD*	*N*	%
Unprotected Anal Intercourse Occasions[a,b]	11.39	17.52		
Proportion of UAI occasions	.62			
Yes			234	88.6
No			23	8.7
HIV Status				
Positive			78	29.5
Negative			186	70.5

Note. [a] Missing n = 7, 2.7%.

[b] An independent t-test comparing HIV-positive versus HIV-negative men on the number of UAI occasions was found to be non-significant (*M* = 13.73, *SD* = 21; *M* = 10.38, *SD* = 15.76, respectively; $t_{(114.24)} = 1.25$, $p = .21$).

Table 3. Bivariate associations between Covariates and Model Variables (*n* = 264)

	Age	Years of Education	Salary	Acculturation	Machismo	HIV status
Social Stress						
Due to heterosexism:						
1. Anti-gay stigma in NYC	.05	-.04	.02	.10	.02	.03
2. Anti-gay stigma in Latino community	-.12*	.21**	.07	.19**	-.19**	-.15*
3. Anti-gay violence and victimization in the last year[a]	-.05	.02	-.01	.03	.10	.02
4. Anti-gay violence and victimization since age 16 excluding last year[a]	.13*	.05	-.01	.03	.02	.11
5. Problems attributed to homophobia	.15*	-.03	-.01	-.03	.18**	.19**
Due to racism:						
6. Problems attributed to racism[a]	.18**	-.03	.01	.02	.24**	.21**

	Age	Years of Education	Salary	Acculturation	Machismo	HIV status
Mediators:						
7. Depression[a]	.07	-.13*	-.02	.01	.25**	.12
8. Self-esteem	.08	.20**	.05	-.02	-.21**	-.04
9. Condom-use Intentions	.09	-.01	-.02	-.15*	-.08	-.10
Moderators						
10. Total substances ever used[a]	.21*	.09	-.04	.29**	-.17**	.31**
11. Substance-use frequency in the past 2 months[a]	-.22**	-.03	.01	-.02	-.07	-.19**
12. Substance- use frequency concurrent with sex in the past 2 months[a]	.21**	-.02	-.04	-.03	.07	.21**
Dependent Variable						
13. UAI[b]	.13	.01	-.01	.47**	.09	.28^
M	32.45	14.02	25,174.73	2.30	1.82	.30
SD	8.41	2.81	26,663.82	1.08	.65	

Note. [a] Data were positively skewed and log transformed data were used. The means and standard deviations are based on the untransformed scores. [b] Poisson regression coefficients are presented.
^ p < .10; * p < .05; ** p < .01

Table 4. Pearson Correlation Coefficients (*n* = 264)

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
Social Stress												
Due to heterosexism:												
1. Anti-gay stigma in NYC	---											
2. Anti-gay stigma in Latino community	.45**	---										
3. Anti-gay violence and victimization in the last year[a]	-.05	-.06	---									
4. Anti-gay violence and victimization since age 16 excluding last year[a]	-.08	.05	.54**	---								
5. Problems attributed to homophobia	.06	.04	.29**	.37**	---							
Due to racism:												
6. Problems attributed to racism[a]	.06	.03	.24**	.26**	.73**	---						
Mediators												
7. Depression[a]	.06	.06	.18**	.18**	.26**	.31**	---					

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
8. Self-esteem	-.19**	.08	-.06	-.02	-.15*	-.21**	-.33**	---				
9. Condom-use Intentions	-.03	-.05	.09	-.05	.02	.03	-.06	.18**	---			
Moderators												
10. Total substances ever used[a]	.09	.14*	.04	.19**	-.03	.02	.07	-.02	-.17*	---		
11. Substance-use frequency in the past 2 months [a]	-.03	.06	-.03	-.06	-.18**	-.14*	.00	.00	-.07	-.18**	---	
12. Substance-use frequency concurrent with sex in the past 2 months[a]	.07	.02	.11	.14*	.10	.11	.20**	-.13*	-.12	.36**	.26**	---
M	2.35	2.70	6.85	87.49	1.83	1.82	10.32	2.23	3.88	3.37	1.42	1.15
SD	.44	.54	13.23	221.74	.71	.67	9.87	.45	1.38	2.59	.94	1.02

Note. [a] Data were positively skewed and the log transformed data were used. The means and standard deviations are based on the untransformed scores.

* $p < .05$; ** $p < .01$

Table 5. Poisson Regression Coefficients to test Hypothesis 1 that Social Stress Predicts UAI[a]

	Estimate	95 % CI	Wald statistic	*p*
Social Stress (Pearson $\chi^2_{(8, 248)} = 23.11$, $p < .05$)				
Due to heterosexism:				
1. Anti-gay stigma in NYC	.44	.04 – .85	4.64	.031
2. Anti-gay stigma in Latino community	-.17	-.51 – .17	0.95	.331
3. Anti-gay violence and victimization in the last year	.001	-.01 – .01	0.02	.895
4. Anti-gay violence and victimization since age 16 excluding last year	.001	.0001 – .001	5.55	.019
5. Problems attributed to homophobia	-.34	-.66 – .02	4.20	.040
Due to racism:				
6. Problems attributed to racism	.31	-.004 – .62	3.93	.047

Note. [a] Controlling for acculturation and HIV status.

Table 6. Multiple Linear Regression Coefficients to Test Hypothesis 2 – Social Stress Predicts Psychological Distress, Condom-Use Intentions, and Substance Use[a]

	B	95 % CI	t-value	*p*
Predicting Depression (R^2 = .08, $F_{(6, 256)}$ = 6.22, p < .05)[b,c]				
1. Anti-gay stigma in NYC	.12	-.19 – .42	.78	.44
2. Anti-gay violence and victimization since age 16 excluding last year	.07	.00 – .14	2.05	.04
3. Problems attributed to homophobia	.00	-.29 – .29	.01	.99
4. Problems attributed to racism	.95	.25 – 1.65	2.67	.01
Predicting Self-esteem (R^2 = .06, $F_{(6, 256)}$ = 4.15, p < .05)[b,c]				
1. Anti-gay stigma in NYC	-.17	-.29 – -.05	2.81	.01
2. Anti-gay violence and victimization since age 16 excluding last year	.00	-.03 – .03	-.02	.99
3. Problems attributed to homophobia	.01	-.11 – .12	.13	.90
4. Problems attributed to racism	-.27	-.53 – .00	1.94	.05
Predicting Condom-use Intentions (R^2 = .00, $F_{(5, 258)}$ = .296, p = .88)[b,d]				
1. Anti-gay stigma in NYC	-.08	-.46 – .30	.43	.67
2. Anti-gay violence and victimization since age 16 excluding last year	-.04	-.12 – .05	.91	.36
3. Problems attributed to homophobia	.03	-.33 – .39	.18	.86

	B	95 % CI	t-value	*p*
4. Problems attributed to racism	.17	-.69 – 1.03	.39	.70
Predicting Substances Ever Used (R^2 = .04, $F_{(8, 255)}$ = 3.53, p < .05)[b,e]				
1. Anti-gay stigma in NYC	.11	-.05 – .26	1.35	.18
2. Anti-gay violence and victimization since age 16 excluding last year	.06	.02 – .09	3.30	.001
3. Problems attributed to homophobia	-.17	-.31 – -.02	-2.36	.02
4. Problems attributed to racism	.13	-.21 – .48	.91	.45
Predicting Substance-use Frequency (R^2 = .02, $F_{(6, 252)}$ = 1.26, p = .29)[b,f]				
1. Anti-gay stigma in NYC	.00	-.14 – .14	.00	.99
2. Anti-gay violence and victimization since age 16 excluding last year	.00	-.03 – .04	.41	.68
3. Problems attributed to homophobia	-.13	-.26 – .01	-1.81	.07
4. Problems attributed to racism	.06	-.28 – .37	.37	.71
Predicting Substance-use Frequency Concurrent with Sex (R^2 = .02, $F_{(6, 234)}$ = .95, p = .44)[b,f]				
1. Anti-gay stigma in NYC	.09	-.11 – .29	.89	.37
2. Anti-gay violence and victimization since age 16 excluding last year	.04	-.01 – .08	1.60	.11
3. Problems attributed to homophobia	-.02	-.21 – .18	-.13	.89
4. Problems attributed to racism	.09	-.37 – .55	.38	.70

Note. [a] As indicated previously, the natural logged values were used for anti-gay violence and victimization since age 16, and problems attributed to racism.

[b] R^2 represents the R^2 change after controlling for covariates.

[c] Controlling for years of education and machismo.

[d] Controlling for acculturation.

[e] Controlling for age, acculturation, machismo, and HIV status.

[f] Controlling for age and HIV status.

Table 7. Multiple Linear Regression to Test Hypothesis 3 that Psychological Distress Predicts Condom-Use Intentions

	B	95 % CI	t-value	*p*
$R^2 = .03$, $F_{(3, 260)} = 4.87$, $p < .05$[b,c]				
1. Depression[a]	-.01	-.15 – .14	-.10	.92
2. Self-esteem	.53	.15 – .92	2.71	.01

Note. [a] As indicated previously, the natural logged values were used.

[b] R^2 represents the R^2 change after controlling for covariates.

[c] Controlling for acculturation.

Table 8. Poisson Regressions Predicting UAI (Hypotheses 4 and 5)[a]

	Estimate	95 % CI	Wald statistic	*p*
Pearson $\chi^2_{(5, 251)} = 21.93$, $p < .05$				
1. Depression	-.05	-.084 – -.017	8.84	.003
2. Depression (squared term)	.002	.001 – .002	20.67	<.001
3. Self-esteem	.07	-.317 – .446	.11	.74
Pearson $\chi^2_{(3, 253)} = 20.01$, $p < .05$				
Condom-use Intentions	-.32	-.42 – -.21	35.71	<.000

Note. [a] Controlling for acculturation and HIV status.

Table 9. Condom-Use Intentions and Social Stress Predicting UAI[a]

	Estimate	95 % CI	Wald statistic	*p*
Pearson $\chi^2_{(7, 249)} = 18.98$, $p < .05$				
1. Condom-use Intentions	-.31	-.41 – -.21	34.06	<.001
2. Anti-gay stigma in NYC	.25	-.08 – .58	2.16	.14
3. Anti-gay violence and victimization since age 16 excluding last year	.001	.0001 – .001	5.5193	.02
4. Problems attributed to homophobia	-.32	-.60 – -.04	5.01	.03
5. Problems attributed to racism	.34	.07 – .61	6.20	.01

Note. [a] Controlling for acculturation and HIV status.

Table 10. Poisson Regression Coefficients using Condom-Use Intentions and Psychological Distress to Predict UAI[a]

	Estimate	95 % CI	Wald statistic	*p*
Pearson $\chi^2_{(5, 251)} = 18.34$, $p < .05$				
1. Condom-use Intentions	-.29	-.40 – -.19	32.79	<.001
2. Depression	-.05	-.08 – -.02	10.46	.001
3. Depression (squared term)	.001	.001 – .002	19.93	<.001

Note. [a] Controlling for acculturation and HIV status.

Table 11. Poisson Regression Coefficients for the Model that Psychological Distress Mediates the Association between Social Stress and UAI[a]

	Estimate	95 % CI	Wald statistic	*p*
Pearson $\chi^2_{(7, 249)} = 22.60$, $p < .05$				
1. Depression	.02	.002 – .030	4.71	.03
2. Anti-gay stigma in NYC	.32	-.021 – .667	3.37	.07
3. Anti-gay violence and victimization since age 16 excluding last year	.001	.0003 – .0014	8.20	<.01
4. Problems attributed to homophobia	-.36	-.675 – -.041	4.89	.03
5. Problems attributed to racism	.25	-.059 – .557	2.51	.11

Note. [a] Controlling for acculturation and HIV status.

Table 12. Poisson Regression Coefficients to Test the Associations between Substance Use and UAI[a]

	Estimate	95 % CI	Wald statistic	*p*
Pearson $\chi^2_{(5, 230)} = 21.90$, $p < .05$				
1. Total substances ever used	.05	-.02 – .11	1.78	.18
2. Substance-use frequency in the past 2 months	.19	-.01 – .39	3.36	.07
3. Substance-use frequency concurrent with sex in the past 2 months	.19	.02 – .36	4.93	.03

Note. [a] Controlling for acculturation and HIV status.

Table 13. Poisson Regression Coefficients to Test Hypothesis 9 that Substance Use Moderates the Effect of Condom-Use Intentions on UAI[a]

	Estimate	95 % CI	Wald statistic	*p*
Pearson $\chi^2_{(5, 251)}$ = 20.32, p < .05				
1. Condom-use intentions	-.25	-.42 – -.07	8.09	.01
2. Number of substances ever used	.07	-.06 – .19	1.05	.31
3. Condom-use intentions X substances ever used	-.02	-.05 – .02	0.71	.40
Pearson $\chi^2_{(5, 246)}$ = 18.56, p < .05				
1. Condom-use intentions	-.11	-.29 – .08	1.29	.25
2. Substance-use frequency in the past 2 months	.60	.26 – .93	11.96	<.001
3. Condom-use intentions X substance use past 2 months	-.12	-.22 – -.02	5.85	.02
Pearson $\chi^2_{(5, 230)}$ = 19.30, p < .05				
1. Condom-use intentions	-.12	-.28 – .04	2.17	.14
2. Substance-use frequency concurrent with sex in the past 2 months	.51	.29 – .73	20.31	<.0001
3. Condom-use intentions X substance use concurrent with sex	-.11	-.18 – -.03	8.14	.004

Note. [a] Controlling for acculturation and HIV status.

Appendix: Questionnaire

Demographics:

DATE:_____/_____/_____ ID# _____
MM DD YYYY

1. When were you born? (MM/DD/YYYY) _____/_____/_____

2. How old were you on your last birthday?

3. What is the highest year of school that you completed?
SCHOOL: 1 2 3 4 5 6 7 8 9 10 11 12/GED
TECHNICAL SCHOOL: 13 14
COLLEGE: 13 14 15 16
GRADUATE SCHOOL: 17 18 19 20 [IF MORE, SPECIFY]__ __ __

4. In what borough do you live?
[1] BRONX
[2] BROOKLYN
[3] MANHATTAN
[4] QUEENS
[5] STATEN ISLAND
[6] OUT OF TOWN

5. What is your zip code? __ __ __ __ __

6. How many people, including yourself, live in the household?
__ __ **IF 1 □ GO TO 9**.

7. Whom do you live with? [CIRCLE ALL THAT APPLY]
[1] MALE LOVER
[2] FRIEND/ROOMMATE
[3] MOTHER
[4] FATHER
[5] SIBLING
[6] SON
[7] DAUGHTER
[8] OTHER MALE RELATIVE
[9] OTHER FEMALE RELATIVE
[10] OTHER (SPECIFY):

8. [IF LIVING WITH MALE LOVER] For how long have you lived with your lover?
___ [1] MONTHS [2] YEARS

9. What is your current legal marital status concerning women?
[1] NEVER MARRIED
[2] MARRIED

[3] DIVORCED
[4] SEPARATED
[5] WIDOWED
[9] REFUSED

10. Do you currently do any work for pay, including any work from your home?
[0] NO
[1] YES

11. What kind of work do/did you do?

[1] UNSKILLED WORKERS:	Janitor, messenger, doorman, dishwasher, housekeeper, busboy
[2] SEMI-SKILLED WORKERS:	Machine operators, waiter, foreman, etc...
[3] SKILLED WORKERS:	Craftman, hairstylist, artist/painter, home attendant, etc..
[4] CLERICAL:	Sales worker, shipping clerk, customer representative, etc..
[5] TECHNICIANS, SEMI-PROFESSIONALS:	X-ray technician, lab helper, assistant manager, computer technician, etc..
[6] SMALL BUSINESS OWNER/ MINOR PROFESSIONALS:	Managers, etc..
[7] MEDIUM-SIZED BUSINESS OWNER/PROFESSIONALS:	Administrators, journalists, counselors, educators, teachers, etc..
[8] LARGE BUSINESS OWNER/ MAJOR PROFESSIONALS:	High executive, etc..

12. (Is/was) your work...
[1] Part-Time?
[2] Full-Time?

13. What is your current yearly income, meaning the wages from all jobs, public assistance, disability, and money earned off the books (including from drugs and sex).
$_____

14. Are you covered by any health insurance such as ... [CIRCLE ALL THAT APPLY]
[1] Medicaid?
[2] Medicare?

[3] Private - paid by employer?
[4] Private - paid by Medicaid?
[5] Private - paid by self?
[6] ADAP
[7] No insurance coverage?

15. Were you born in the U.S.?
[0] NO
[1] YES

16.**[IF U.S. BORN CHECK 1 AND GO TO #18]**
I remind you that all the information you give is confidential. Just to understand what kind of problems you face, I'd like to know what is your current immigration status?
[1] CITIZEN
[2] LEGAL RESIDENT (GREEN CARD)
[3] ON STUDENT VISA [IF EXPIRED, CIRCLE 5]
[4] ON TOURIST VISA [IF EXPIRED, CIRCLE 5]
[5] UNDOCUMENTED IMMIGRANT
[6] OTHER. SPECIFY: _____

17. How old were you when you first moved to the U.S.? [IF LESS THAN ONE YEAR-OLD, WRITE "0"]

__ __
YEARS

18. How long did you spend in Latin America before your 18th birthday?[ASK ALL PARTICIPANTS]
__ __ [1] DAYS[2] WEEKS[3] MONTHS[4] YEARS

19. What proportion of your life have you spent in the U.S.?
_____%

Acculturation:

The following questions refer to your use of language. Please circle only one answer per question.

Tell me:	Only Spanish	Spanish better than English	Both equall y	English better than Spanish	Only English
1. In general, what language (s) do you read and speak?	1	2	3	4	5
	Only Spanish	More Spanish than English	Both equall y	More English than Spanish	Only English
2. What was the language (s) you used as a child?	1	2	3	4	5
3. What language (s) do you usually speak at home?	1	2	3	4	5
4. In which language (s) do you usually think?	1	2	3	4	5
5. What language (s) do you usually speak with your friends?	1	2	3	4	5

(Marin, G., Sabogal, F., Marin, B. V., Otero-Sabogal, R., Perez-Stable, E.J. (1987). Development of a short acculturation scale of Hispanics. Special Issue: Acculturation research. *Hispanic Journal of Behavioral Sciences, 9*(2), 183-205.)

Machismo:

Now we would like to know your level of agreement or disagreement with some beliefs at times popular among Latinos. Please circle only one number per statement.

	Disagree	Slightly Disagree	Slightly Agree	Agree
1. A man should not marry a woman who is taller than him.	1	2	3	4
2. It is the mother's special responsibility to provide her children with proper religious training.	1	2	3	4
3. Boys should not be allowed to play with dolls, and other girls' toys.	1	2	3	4
4. Parents should maintain stricter control over their daughters than their sons.	1	2	3	4
5. There are some jobs that women simply should not have.	1	2	3	4
6. It is more important for a woman to learn how to take care of the house and the family than it is for her to get a college education.	1	2	3	4
7. A wife should never contradict her husband in public.	1	2	3	4
8. Men are more intelligent than women.	1	2	3	4
9. No matter what people say, women really like dominant men.	1	2	3	4
10. Some equality in marriage is a good thing, but by and large the father ought to have the main say so in family matters.	1	2	3	4
11. For the most part, it is better to be a man than a woman.	1	2	3	4
12. Most women have little respect for weak men.	1	2	3	4

13. I would be more comfortable with a male boss than with a female boss.	1	2	3	4
14. It is important for a man to be strong.	1	2	3	4
15. Girls should not be allowed to play with boys' toys such as soldiers and footballs.	1	2	3	4
16. Wives should respect the man's position as head of the household.	1	2	3	4
17. The father always knows what is best for the family.	1	2	3	4

(*Cuellar, I., Arnold, B., & Gonzalez, G. (1995). Cognitive referents of acculturation: Assessment of cultural constructs in Mexican Americans. *Journal of Community Psychology, 23*, 339-356.)

INDEPENDENT VARIABLES

Experiences of anti-gay violence and victimization:

I will read to you a list of incidents you may have experienced because someone presumed you to be gay. Please tell me how often you have experience each incident during the past year and since you reach age 16.

	In the past year,		Since age 16 (not including the past twelve months),	
	A. How many times have you... (NEVER=0)	B. Was a reference to AIDS made when that happened? (CIRCLE ONE) **NO YES**	C. How many times have you... (NEVER=0)	D. Was a reference to AIDS made when that happened? (CIRCLE ONE) **NO YES**
1. had verbal insults directed at you?		0 1		0 1
2. been threatened with physical violence?		0 1		0 1
3. had your personal property damaged or destroyed?		0 1		0 1
4. had objects thrown at you?		0 1		0 1
5. been chased or followed?		0 1		0 1
6. been spat upon?		0 1		0 1
7. been punched, hit, kicked, or beaten?		0 1		0 1
8. been assaulted or wounded with a weapon?		0 1		0 1
9. been sexually harassed (without assault)?		0 1		0 1
10. been beaten or assaulted by police?		0 1		0 1

11. Did you ever get medical care after any of these incidents? (CIRCLE ONE)
[0] NO [1] YES

12. Did you report any of these incidents to the police? (CIRCLE ONE)
[0] NO [1] YES

	In the past year,		SINCE AGE 16 (not including the past twelve months),	
	A. How many times have you... (NEVER=0)	B. Was a reference to AIDS made when that happened? (CIRCLE ONE) **NO YES**	C. How many times have you... (NEVER=0)	D. Was a reference to AIDS made when that happened? (CIRCLE ONE) **NO YES**
13. been denied employment or from a job?		0 1		0 1
14. been denied a promotion or salary increase?		0 1		0 1
15. received an unfair work evaluation?		0 1		0 1
16. been evicted or denied housing?		0 1		0 1
17. been refused services in a bar, restaurant, club, or similar establishment?		0 1		0 1
18. been refused services in a hotel, motel, or similar establishment?		0 1		0 1
19. been refused other services or accommodations?		0 1		0 1
20. been denied insurance?		0 1		0 1

(*Adapted from Herek, G. M., & Berrill, K. T. (Eds.). (1992). *Hate crimes: Confronting violence against lesbians and gay men*. Sage Publications. Newbury Park.)

Perceptions of stigma:

The following questions refer to people's attitudes about gays, bisexuals, and Latinos. Please circle the option that most reflects your opinion regarding the topic.

	Strongly Disagree	Disagree	Agree	Strongly Agree
1. Most people in New York City area believe that a gay/bisexual man is just as trustworthy as the average heterosexual citizen.	1	2	3	4
2. Most people in the Latino community believe that a gay/bisexual man is just as trustworthy as the average heterosexual citizen.	1	2	3	4
3. Most employers in New York City area will hire a gay/bisexual man if he is qualified for the job.	1	2	3	4
4. Most employers in the Latino community will hire a gay/bisexual man if he is qualified for the job.	1	2	3	4
5. Most people in New York City area feel that homosexuality is a sign of personal failure.	1	2	3	4
6. Most people in the Latino community feel that homosexuality is a sign of personal failure.	1	2	3	4
7. Most people in New York City area would not hire a gay/bisexual man to take care of their children.	1	2	3	4
8. Most people in the Latino Community would not hire a gay/bisexual man to take care of their children.	1	2	3	4
9. Most people in New York City area think less of a person who is gay/bisexual.	1	2	3	4
10. Most people in the Latino community think less of a person who is gay/bisexual.	1	2	3	4

11. Most People in New York City area would treat a gay/bisexual man just as they would treat anyone.	1	2	3	4
12. Most People in the Latino community would treat a gay/bisexual man just as they would treat anyone.	1	2	3	4
13. Most people in New York City area will willingly accept a gay/bisexual man as close friend.	1	2	3	4
14. Most people in the Latino community will willingly accept a gay/bisexual man as close friend.	1	2	3	4

(*Adapted from: Herek, G. M., & Glunt, E. K. (1995). Identity and community among gay and bisexual men in the AIDS era: Preliminary findings from the Sacramento men's health study. In G. M. Herek and B. Greene (Eds.). *AIDS, Identity, and Community: Psychological Perspectives on the HIV Epdiemic and Lesbians and Gay Men*. Newbury Park, CA.: SAGE. Pp. 55-84.)

Attributions of setbacks to heterosexism:

Please circle the option that reflects better how you feel about this topic.

	Strongly Disagree	Disagree	Agree	Strongly Agree
1. In general, my own failures have happened because I am gay/bisexual in a homophobic world.	1	2	3	4
2. Many of the bad things in my life happen because of homophobia.	1	2	3	4
3. Many of the bad things that have happened to me were because I am gay/bisexual.	1	2	3	4
4. Many of my own setbacks in life have happened because of homophobia.	1	2	3	4

(*Adapted from Herek, G. M., & Glunt, E. K. (1995). Identity and community among gay and bisexual men in the AIDS era: Preliminary findings from the Sacramento men's health study. In G. M. Herek and B. Greene (Eds.). *AIDS, Identity, and Community: Psychological Perspectives on the HIV Epdiemic and Lesbians and Gay Men.* Newbury Park, CA.: SAGE. Pp. 55-84.)

Social Stress related to racism:

Please circle the option that reflects better how you feel about this topic.

	Strongly Disagree	Disagree	Agree	Strongly Agree
1. Overall, my own failures have happened because I am Latino in a racist world.	1	2	3	4
2. Many of the bad things in my life happen because of racism.	1	2	3	4
3. Many of the bad things that have happened to me were because I am Latino.	1	2	3	4
4. Many of my own setbacks in life have happened because of racism.	1	2	3	4

(*Adapted from Herek, G. M., & Glunt, E. K. (1995). Identity and community among gay and bisexual men in the AIDS era: Preliminary findings from the Sacramento men's health study. In G. M. Herek and B. Greene (Eds.). *AIDS, Identity, and Community: Psychological Perspectives on the HIV Epdiemic and Lesbians and Gay Men*. Newbury Park, CA.: SAGE. Pp. 55-84.)

MEDIATORS

Beck Depression Inventory:

This questionnaire consists of 21 groups of statements. Please read each group of statements carefully, and then pick out the **one statement** in each group that best describes the way you have been feeling during the **past two weeks, including today**. Circle the number beside the statement you have picked. If several statements in the group seem to apply equally well, circle the highest number for that group. Be sure that you do not choose more than one statement for any group, including Item 16 (Changes in Sleeping Pattern) or Item 18 (Changes in Appetite).

1.	
I do not feel sad.	0
I feel sad much of the time.	1
I am sad all the time.	2
I am so sad or unhappy that I can't stand it.	3
2.	
I am not discouraged about my future.	0
I feel more discouraged about my future than I used to be.	1
I do not expect things to work out for me.	2
I feel my future is hopeless and will only get worse.	3
3.	
I do not feel like a failure.	0
I have failed more than I should have.	1
As I look back, I see a lot of failures.	2
I feel I am a total failure as a person.	3
4.	
I get as much pleasure as I ever did from the things I enjoy.	0
I don't enjoy things as much as I used to.	1
I get very little pleasure from the things I used to enjoy.	2
I can't get any pleasure from the things I used to enjoy.	3
5.	
I don't feel particularly guilty.	0
I feel guilty over many things I have done or should have done.	1
	2
I feel quite guilty most of the time.	3
I feel guilty all of the time.	

6. I don't feel I am being punished. I feel I may be punished. I expect to be punished. I feel I am being punished.	 0 1 2 3
7. I feel the same about myself as ever. I have lost confidence in myself. I am disappointed in myself. I dislike myself.	 0 1 2 3
8. I don't criticize or blame myself more than usual. I am more critical of myself than I used to be. I criticize myself for all of my faults. I blame myself for everything bad that happens.	 0 1 2 3
9. I don't have any thoughts of killing myself. I have thoughts of killing myself, but I would not carry them out. I would like to kill myself. I would kill myself if I had the chance.	 0 1 2 3
10. I don't cry anymore than I used to. I cry more now than I used to. I cry over every little thing. I feel like crying, but I can't.	 0 1 2 3
11. I am no more restless or wound up than usual. I feel more restless or wound up than usual. I am so restless or agitated that it's hard to stay still. I am so restless or agitated that I have to keep moving or doing something.	 0 1 2 3
12. I have not lost interest in other people or activities. I am less interested in other people or things than before. I have lost most of my interest in other people or things. It's hard to get interested in anything.	 0 1 2 3

13. I make decisions about as well as ever. I find it more difficult to make decisions than usual. I have much greater difficulty in making decisions than I used to. I have trouble making any decisions.	 0 1 2 3
14. I do not feel I am worthless. I don't consider myself as worthwhile and useful as I used to. I feel more worthless as compared to other people. I feel utterly worthless.	 0 1 2 3
15. I have as much energy as ever. I have less energy that I used to have. I don't have enough energy to do very much. I don't have enough energy to do anything.	 0 1 2 3
16. I have not experienced any change in my sleeping pattern. 1a I sleep somewhat more than usual. 1b I sleep somewhat less than usual. 2a I sleep a lot more than usual. 2b I sleep a lot less than usual. 3a I sleep most of the day. 3b I wake up 1-2 hours early and can't get back to sleep	 0 1a 1b 2a 2b 3a 3b
17. I am no more irritable than usual. I am more irritable than usual. I am much more irritable than usual. I am irritable all the time.	 0 1 2 3
18. I have not experienced any change in my appetite. 1a My appetite is somewhat less than usual. 1b My appetite is somewhat greater than usual. 2a My appetite is much less than before. 2b My appetite is much greater than usual. 3a I have no appetite at all. 3b I crave food all the time.	 0 1a 1b 2a 2b 3a 3b
19. I can concentrate as well as ever. I can't concentrate as well as usual. It's hard to keep my mind on anything for very long. I find I can't concentrate on anything.	 0 1 2 3

20. I am no more tired or fatigued than usual. I get more tired or fatigued more easily than usual. I am too tired or fatigued to do a lot of the things I used to do. I am too tired or fatigued to do most of the things I used to do.	 0 1 2 3
21. I have not noticed any recent change in my interest in sex. I am less interested in sex than I used to be. I am much less interested in sex now. I have lost interest in sex completely.	 0 1 2 3

*Beck, A.T., & Beamesderfer, A. (1974). Assessment of depression. In P. Pichot, Karger, Basel (Eds.). *The Depression Inventory in Psychological Measurements in Psychopharmacology. 7*, 151-169.

Self-esteem:

The following questions refer to the way you perceive yourself. Please rate your level of agreement or disagreement drawing a circle around the number that indicates how much you agree with the statement.

	Strongly Disagree	Disagree	Agree	Strongly Agree
1. On the whole, I am satisfied with myself	0	1	2	3
2. At times I think I am no good at all	0	1	2	3
3. I feel that I have a number of good qualities	0	1	2	3
4. I am able to do things as well as most other people	0	1	2	3
5. I feel I do not have much to be proud of	0	1	2	3
6. I certainly feel useless at times	0	1	2	3
7. I feel that I am a person of worth, at least on an equal plane with others	0	1	2	3
8. I wish I could have more respect for myself	0	1	2	3
9. All in all, I am inclined to feel that I am a failure	0	1	2	3

10. I take a positive attitude toward myself	0	1	2	3

(*Rosenberg, M. (1965). Society and the Adolescent Self-Image. Princeton, NJ: Princeton University Press.)

Condom use intentions:

	Disagree very much	Disagree moderately	Disagree slightly	Agree slightly	Agree moderately	Agree very much
I intend to use a condom every time...						
1. someone sucks my dick	1	2	3	4	5	6
2. I penetrate someone	1	2	3	4	5	6
I intend to have my partner(s) use a condom every time...						
3. I suck him(them)	1	2	3	4	5	6
4. they(he) penetrate(s) me	1	2	3	4	5	6

MODERATORS

Substance use:

Now I will read a list of different drugs. Have you ever used...[GO DOWN "NO/YES" COLUMN FIRST]

	EVER USED?		**[A]** FREQUENCY PAST 2 MONTHS	**[B]** FREQUENCY WITH SEX
	NO	**YES**		
1. Alcohol?	0	1		
2. Marihuana/hashish/?	0	1		
3. Nitrates/poppers?	0	1		
4. Crack/freebase/hubby?	0	1		
5. Heroin & cocaine mixed (speedball)?	0	1		
6. Heroin (smack) by itself?	0	1		
7. Cocaine by itself?	0	1		
8. Amphetamine/prescription stimulants (uppers, speed)?	0	1		
9. Methadone?	0	1		
10. Barbiturates/tranquilizers (downers)?	0	1		
11. PCP (angel dust)?	0	1		
12. Hallucinogens/psychodelics (MDA, LSD)?	0	1		
13. Ectasy?	0	1		
14. Glue/paint thinner?	0	1		
15. Steroids	0	1		
16. Estrogens	0	1		
17. Other (specify:_____)	0	1		

Now using card #3 [SHOW CARD] please tell me:

CARD # 3

0 = NEVER/NONE	4 = 2-6 TIMES A WEEK
1 = ONCE A MONTH OR LESS	5 = ABOUT ONCE A DAY
2 = 2-3 TIMES A MONTH	6 = MORE THAN ONCE A DAY
3 = ABOUT ONCE A WEEK	7 = REFUSED

A. How often have you used _____ during the past two months?

B. During the past two months, how often have you used _____ immediately before or during sex? [INTERVIEWER: WRITE RESPONSES IN COLUMN B OF THE TABLE]

DEPENDENT VARIABLE

Sexual risk behavior:

INTRODUCTION

This part of the interview asks specific questions about your sexual partners, sexual activity and sexual functioning. You may find some of these questions difficult to answer because you may not be used to talking about sexual matters with strangers. It may help you if you remember that I do interviews like this all the time, and there is probably nothing sexual I have not already heard from others.

To make sure we understand each other, I would like you to tell me what expressions you use and feel comfortable with concerning certain sexual practices.

* Manual sex: When a man strokes another man's penis or when someone does it to him (for example, some people call this jerking off):
  _____

* Manual sex: When someone caresses a woman's vagina and/or clitoris (finger fucking):
  _____

* Oral sex: When a man puts his penis in someone's mouth or someone else does it to him (some people call this blow job):
  _____

* Oral sex: When a man puts his mouth/tongue on a woman's clitoris and/or vagina:
  _____

* Anal intercourse: When a man puts his penis in someone's rectum, or when another man does it to him (some people call this butt fucking):
  _____

* Vaginal intercourse: When a man puts his penis in a woman's vagina (some people call this pussy fucking):
  _____

* When someone puts his/her tongue on someone's anus or in someone's rectum (some people call this rimming):
  _____

* To ejaculate (some people call this to cum):
_____

CONFIRM PARTICIPANT'S PREFERENCE REGARDING TERMINOLOGY.

People use a variety of words for sexual matters, and I want to make sure we understand each other. Therefore, if there are any words or questions that aren't clear, please let me know. I remind you that everything you tell me is confidential.

The following questions refer to your sexual behavior during the last two months or since [STATE DATE].

When you respond to the questions that follow, please refer only to the period between [TODAY'S DAY TWO MONTHS AGO] and today.

1. [INTERVIEWER: IF PARTICIPANT VOLUNTEERS THAT HE HAS NOT HAD ANY SEX DURING THE PAST TWO MONTHS, CONFIRM. IF HE STILL INDICATES NO SEXUAL ACTIVITY, CIRCLE HERE _1_ AND ALERT THE PROJECT COORDINATOR

CROSSDRESSERS

2. In the next section of the questionnaire I will ask you about your sexual behavior with men and women. But before that, I would like to know whether during the last two
months you have had sex with transgender people, also called transvestites, male crossdressers, drag queens, or men who usually dress in women's clothes.

[0] NO **--> GO TO NEXT SECTION**
[1] YES

Many transvestites, male crossdressers, and drag queens do not see themselves as men. Maybe you don't see them as men either. However, since in this interview we are concerned with sexual anatomy please count these partners as men if they have a penis, even if they also have breasts. If they don't have a penis, include them in your answers about sex with women. If you are not sure, please consider these partners as men for the purpose of this interview.

SEXUAL BEHAVIOR WITH MEN
I will ask you about three different types of male sexual partners. I will ask you first, about a lover; second, about one-night stands; and third, about anybody else.

LOVER

1. During the past two months, have you had a lover or spouse equivalent, a man with whom you felt emotionally involved in a committed relationship and with whom you had sex?
   [0] NO □**GO TO 4**
   [1] YES

2. How many of these partners have you had in the last two months?
   ___ ___ ___

3. With these partners, how many times altogether did you have sex of any kind (manual, oral, or anal) in the past two months?
   ___ ___ ___

ONE NIGHT STAND

4. During the last two months, have you had one-night stands, men you had sex with only once?
   [0] NO □**GO TO 6**
   [1] YES

5. How many of these partners have you had in the last two months?
   _____

OTHER

6. During the past two months, have you had other types of male sexual partners, men who were neither lovers nor one-night stands?
   [0] NO □**GO TO NEXT SECTION**
   [1] YES

7. How many of these partners have you had in the last two months?
   ___ ___ ___

8. With these partners, how many times altogether did you have sex of any kind (manual, oral, or anal) in the past two months?
   ___ ___ ___

IF RESPONDENT DENIED HAVING A LOVER, SKIP THIS SECTION

I will now ask you some questions about your sexual behavior with your lover(s). You told me that you had sex with your lover(s) on _____ [REFER TO THE ANSWER TO QUESTION #3 ON PAGE 3.3] occasions during the last two months.

On how many of those occasions ...

		# OF OCCASIONS
1.	...did you masturbate him?	
2.	...did he masturbate you?	
3.	...did you put the head of your penis in his mouth (did you get a blow job)?	
4.	...did you put the head of your penis in his mouth (did you get a blow job) without a condom?	
5.	...did you ejaculate (come) in his mouth?	
6.	...did he swallow your semen?	
7.	...did he put the head of his penis in your mouth (did you give him a blow job)?	
8.	...did he put the head of his penis in your mouth (did you give him a blow job) without a condom?	
9.	...did he ejaculate (come) in your mouth?	
10.	...did you swallow his semen?	
11.	...did you put your penis in his rectum (did you fuck him)?	
12.	...did you put your penis in his rectum (did you fuck him) without a condom?	
13.	...did you ejaculate (come) inside him?	
14.	...did he put his penis in your rectum (did he fuck you)?	
15.	...did he put his penis in your rectum (did he fuck you) without a condom?	
16.	...did he ejaculate (come) inside you?	

IF RESPONDENT DENIED HAVING MALE ONE NIGHT STANDS, SKIP THIS SECTION

I will now ask you questions about your sexual behavior with your one night stands during the last two months. You told me that you had sex with one night stands in _____ [REFER TO THE ANSWER TO QUESTION #5 ON PAGE 3.3] occasions during the past two months.

On how many of those occasions ...

		# OF OCCASIONS
1.	...did you masturbate him?	
2.	...did he masturbate you?	
3.	...did you put the head of your penis in his mouth (did you get a blow job)?	
4.	...did you put the head of your penis in his mouth (did you get a blow job) without a condom?	
5.	...did you ejaculate (come) in his mouth?	
6.	...did he swallow your semen?	
7.	...did he put the head of his penis in your mouth (did you give him a blow job)?	
8.	...did he put the head of his penis in your mouth (did you give him a blow job) without a condom?	
9.	...did he ejaculate (come) in your mouth?	
10.	...did you swallow his semen?	
11.	...did you put your penis in his rectum (did you fuck him)?	
12.	...did you put your penis in his rectum (did you fuck him) without a condom?	
13.	...did you ejaculate (come) inside him?	
14.	...did he put his penis in your rectum (did he fuck you)?	
15.	...did he put his penis in your rectum (did he fuck you) without a condom?	
16.	...did he ejaculate (come) inside you?	

IF RESPONDENT DENIED HAVING OTHER MALE PARTNERS, SKIP THIS SECTION

I will now ask you questions about your sexual behavior with other male partners during the last two months. You told me that you had sex with other male partners in _____ [REFER TO THE ANSWER TO QUESTION #8 ON PAGE 3.3] occasions during the past two months.

On how many of those occasions ...

		# OF OCCASIONS
1.	...did you masturbate him?	
2.	...did he masturbate you?	
3.	...did you put the head of your penis in his mouth (did you get a blow job)?	
4.	...did you put the head of your penis in his mouth (did you get a blow job) without a condom?	
5.	...did you ejaculate (come) in his mouth?	
6.	...did he swallow your semen?	
7.	...did he put the head of his penis in your mouth (did you give him a blow job)?	
8.	...did he put the head of his penis in your mouth (did you give him a blow job) without a condom?	
9.	...did he ejaculate (come) in your mouth?	
10.	...did you swallow his semen?	
11.	...did you put your penis in his rectum (did you fuck him)?	
12.	...did you put your penis in his rectum (did you fuck him) without a condom?	
13.	...did you ejaculate (come) inside him?	
14.	...did he put his penis in your rectum (did he fuck you)?	
15.	...did he put his penis in your rectum (did he fuck you) without a condom?	
16.	...did he ejaculate (come) inside you?	

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