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Master of Public Health Research Project

Machismo as a Determinant for HIV/STD Risk Behavior Among Latino MSM

by

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Abstract

Objective: Male-to-male sexual contact is the most common mode of transmission for HIV among Latino men. Psychosocial factors such as machismo, homophobic discrimination, and internalized homophobia have been hypothesized to greatly impact sexual behaviors among Latinos. However, studies investigating the relationship between these psychosocial factors and risky sexual behaviors are limited. This study examined the impact of machismo on risky sexual behaviors among Latino Male who have Sex with Men (MSM).

Methods: This study utilized data collected from 254 Latino MSM in 1999 from selected cities within Virginia. The analysis focused on respondent demographic characteristics, psychosocial factors, acculturation, and sexual risky behaviors. Composite measures for acculturation, machismo, internalized homophobia, and sexual discrimination were created by combining sets of relevant questions. Bivariate and multivariate analyses were used and odds ratio and 95% confidence intervals were calculated.

Results

The study found a statistically significant relationship between machismo and HIV/STD sexual risk behaviors. Latino MSM with high machismo values were over four times more likely to engage in HIV/STD sexual risk behaviors compared to those with low machismo values (OR=5.53, 95%CI =1.85-16.47). In contrast, HIV/STD sexual risk behaviors were not significantly associated with acculturation, discrimination, or homophobia.

Conclusions

Machismo is a significant risk factor for HIV and STD sexual risk behaviors in Latino MSM. Culturally competent messaging and appropriate skill building opportunities addressing machismo values should be incorporated into HIV and STD prevention programs that target Latino MSM.

Keywords: *Latino MSM, HIV/STD risk, Machismo, Internalized Homophobia, Internalized Discrimination, Acculturation*

Introduction

Although men who have sex with men (MSM) make up only 5-10 percent of the population, it is estimated that in 2004 they accounted for 46% of all reported cases of HIV/AIDS, and 63% of all male adult and adolescent cases.¹ Latinos represented an estimated 20% of new HIV infections and had the second highest rate of AIDS diagnoses at 26/100,000—over three times that of non-Latino whites.^{2,3} Male-to-male sexual contact was the most common mode of transmission for HIV in the Latino community; it is estimated that about 44 percent of Latino men with HIV/AIDS in the United States contracted the virus from an infected male partner.⁴ In 2002, AIDS was the third leading cause of death in Latino men aged 35-44.⁵

The term Hispanic/Latino includes all persons of Cuban, Mexican, Puerto Rican, South or Central-American, or other Spanish culture or origin, regardless of race.⁶ According to the US Census, Hispanics and Latinos comprise the largest minority group,⁷ and are the second fastest growing after Asian Pacific Islanders.⁸ It is estimated that the Hispanic/Latino population will grow from 35.6 million in 2000 to 102.6 million by 2050—meaning that almost a quarter of the entire U.S. population will be Hispanic/Latino.⁹

The Centers for Disease Control recognize the primary determinants of HIV transmission as behavior, and the presence of existing sexually transmitted diseases (STD).¹⁰ Healthy People 2010 established several goals for HIV/AIDS, including reducing the number of new AIDS cases among adolescent and adult men who have sex with men. There are many factors that contribute to individual risk of acquiring a sexually transmitted disease including those with biologic origins like gender, presence of existing sexually transmitted diseases, and nature and mechanism of specific STDs; behavioral factors like number of sexual partners, monogamy, sexual activity by type, and use of condoms; and partner characteristics.^{11,12,13,14} Studies show

that Latinos experience higher prevalence of STDs than Whites, and that STDs increase both HIV transmission and acquisition by as much as 500 percent.¹⁵ Correct and consistent condom use is well documented as a protective behavior that decreases risk of HIV/AIDS and other sexually transmitted infections.^{16,17} Having multiple partners, or a primary partner who has multiple partners puts an individual at risk for contracting HIV and other sexually transmitted diseases.¹⁸ Furthermore, the risk of exposure to STDs increases as the number of recent sexual partners increases. It has also been shown that STDs increase the transmissibility of HIV, and that the risk of HIV infection increases as the number of of lifetime sexual partners increases.^{19,20} Paying for sex has also been highly associated with prevalence of HIV infection, and low condom use.^{21,22}

Despite higher levels of education, many immigrants have low income, difficulty finding work, and experience less than adequate working conditions. Language barriers and limited language proficiency make it more challenging to navigate their new country. Living, working, and thriving under these conditions can be stressful and certainly make accessing health care and other social services more difficult.²³ Psychosocial and cultural variables are also influential to the experience of Latino MSM in the United States.

Machismo is a value shared by the Latino community that emphasizes masculinity, and masculine virtues like virility, dominance, aggressiveness, and courage. Machismo also supports beliefs about homosexuality, such that it is perceived as hurtful or embarrassing to family.²⁴ Similarly, homosexuality can be seen as an indication of weakness, and does not support the definition of masculine attributes that family and community members would value.^{25,26} These negative attitudes and beliefs can result in men being afraid or unwilling to embrace their homosexual or bisexual identities^{27,28} They can also generate fear in Latino MSM leading them

to secretly engage in sex with other men, while still identifying as heterosexual.^{29,30,31,32}

Prevalence of non-gay self identification and bisexual behavior among racial minorities is fairly common; within the Latino culture, this trend is commonly attributed to machismo values.^{33,34}

Traditional machismo values have been shown to lead men to pursue multiple sexual partners, engage in more casual sexual relationships, and use condoms less frequently.^{35,36}

In the United States, discrimination is insidious, and quite prevalent. It has been associated with depression, higher blood pressure and other health affects.³⁷ Childhood and adult racism has been associated with greater sexual risk taking.³⁸ Experiences of homophobic discrimination can range from being made fun of, to being threatened or even physically assaulted because of sexual orientation. The resulting feelings or actions that accompany such experiences can have a negative impact on an individual's mental and physical health.

Homophobia, the fear or dislike of gay men and women, can be disempowering to Latino MSM who must cope with silence from their families and communities. Lower self worth, and higher levels of experienced homophobia have also been associated with sexual risk.^{39,40,41}

Familismo is a value in Latin culture that speaks to a personal commitment to family members, and to the family unit and greater community. Homophobia and *familismo* can sometimes lead to a separation between family and culture, and sexual identity, in an effort to avoid being rejected. These actions can result in low self esteem, personal shame, and sexual behaviors that put Latino MSM at risk for HIV and other STDs.^{42,43,44} In addition to the barriers that these attitudes and experiences present to Latino MSM, it has been shown that drug use is often used to manage feelings of shame that stem from sexual orientation; IV drug use is the second leading exposure category for HIV/AIDS among Latino men, and the third leading exposure category for MSM.^{45,46}

Acculturation is the process by which an individual from one culture adopts some values, beliefs and behaviors of a host culture. It is a way to describe how a person might change as they interact with their new environment, and is a process unique to each person.⁴⁷ Although the literature suggests that multidimensional scales would be more descriptive and therefore more relevant, linear models are used most frequently.⁴⁸ Specific measures of acculturation in research are varied, but the more commonly accepted proxy measures of acculturation include: generational status, length of residence in the United States, and language used to read and speak.^{49,50,51} Latino assimilation to American culture has been associated with both positive and negative health outcomes. A paradox has been described in the literature due to the fact that Latinos, as a group, have lower socioeconomic indicators, but lower overall mortality rates.⁵² The concept of acculturation has been used to partially describe this paradox because associations vary by gender, and by health behavior and outcome. Greater acculturation has been associated with higher prevalence of current smoking behaviors and an increase in cigarette smoking in Latino women,⁵³ higher prevalence of diabetes⁵⁴ and obesity,⁵⁵ as well as higher body mass indices (BMI), greater alcohol intake,⁵⁶ and increased risky sexual behaviors.^{57,58,59} Higher levels of acculturation have also been associated with varying levels of physical activity and leisure time.⁶⁰

Psychosocial factors such as machismo, homophobic discrimination, and internalized homophobia have been hypothesized to greatly impact sexual behaviors among Latinos. However, studies investigating the relationship between these psychosocial factors and risky sexual behaviors are limited. While some studies have addressed acculturation as it relates to Latinos and in relation to specific health behaviors, few studies have focused exclusively on Latino MSM and health risks associated with sexual behaviors like paying for sex, and engaging

in sexual activity with secondary partners.⁶¹ Additionally, psychosocial variables that may impact sexual risk behavior like machismo,^{62,63,64} homophobic discrimination,⁶⁵ and internalized homophobia,⁶⁶ have not been examined relative these sexual risk taking variables. Furthermore, previous studies have focused primarily on agricultural workers or migrants along the U.S.-Mexico border.^{67,68}

Our analyses examine the association between machismo and risky sexual behavior among Latino MSM. Additionally, we were interested in assessing the association between acculturation and HIV/STD sexual risk behaviors, as well as the influence of psychosocial factors like machismo, experienced homophobic discrimination, and internalized homophobia on HIV/STD sexual risk behaviors. HIV/AIDS prevention has previously focused on the individual characteristics that increase risk for STD and HIV transmission, but recent findings suggest that cultural factors and social constructs are important determinants of health. We were interested in investigating machismo as a determinant for risky sexual behavior among Latino MSM. It was hypothesized that higher levels of machismo values would be positively associated with risky sex. The results of this study will help us to better understand the psychosocial and cultural variables that impact the sexual risk behaviors of Latino MSM.

Methods

This is a descriptive study of Latino men who have sex with men. The survey was conducted in 1999 by the Survey and Evaluation Research Laboratory (SERL) at Virginia Commonwealth University (VCU), for the Virginia HIV Community Planning Committee.

Study Population and Data Collection

The survey sampled n=354 Latino MSM and was administered during the summer and fall of 1999 by four bilingual Latino MSM highly trained in HIV/AIDS prevention. Three urban

areas in Virginia were targeted for sampling after geographic identification efforts confirmed them to have high Latino populations: Tidewater, Northern Virginia, and Richmond.

Recruitment efforts included solicitation of both Latino and non-Latino, gay-identified and non gay-identified community venues. The use of “snow ball” sampling, and home parties serving food and beverages were also highly successful in recruiting participants.

Exclusion criteria

Sixty-three respondents were excluded from the study based on self reportedly never having had sex with another man, another 36 were excluded because they hadn't had a sexual relationship in the past 3 months; all analyses were performed with the remaining n=255 respondents. For the purpose of our analysis, and in an effort to eliminate recall bias, we included only those respondents who reported having sex in the past 3 months, and excluded those who had not. It has been documented that the reliability of self report for condom use during sex is inversely proportional—reliability decreases as the duration of the recall period increases.⁶⁹

Instruments and Measurements

A questionnaire was developed based on a previous survey targeting general MSM in Virginia, with the addition of questions more relevant to the Latino target population. The questionnaire addressed demographics, national origins, time in the United States, education, and income; opinions and perceptions about sex and sexual behavior, sexual activities over the past 3 months including condom use, monogamy, and paid for sex/have been paid for sex as well as questions related to HIV testing and status. Questions related to psychosocial values like machismo, and homophobia were included, in addition to experienced discrimination based on sexual orientation, and proxy measures for acculturation. The questionnaire was available in

both Spanish and English, and surveys were completed individually and in groups through self report.⁷⁰ Bilingual survey proctors were available for translating.⁷¹

Outcome Variable:

HIV/STD sexual risk behaviors. A composite variable ‘risky sex’ was created to reflect a dichotomized value of “risk”. The questionnaire asked respondents about their sexual activity in the past three months. For our analysis we combined 7 statements of risk: paid for sex, been paid for sex, number of male and female partners in the past three months, monogamy agreement between primary partners, and how often condoms were used for vaginal and anal sex. Respondents who reported engaging in any one or more, of the 7 risk variables were assigned a risk value of 1, while those reporting no risk behaviors were assigned a risk value of 0. Similar scales have been used in transgender research.⁷² It is commonly recognized that individuals are at greater risk for contracting HIV or other sexually transmitted diseases when they engage in any one of the behavior variables included in the composite.

Psychosocial Variables:

Acculturation. A composite variable ‘acculturation’ was created as a proxy for true acculturation. The variables used to create ‘acculturation’ included: language used most often to read and speak, and number of years in the United States. Respondents were asked “In general, which language do you read?”, and were instructed to check one of five options ranging from Spanish only to English only. Similarly, respondents were asked about language used to speak. In open-ended format, respondents were asked to specify how many months and years they had lived in the United States. All responses were assigned a quantitative value and combined to create an acculturation scale ranging from 1-15, where 1 represented low acculturation and 15 represented high acculturation.

Machismo: Ten statements assessed the attitudes and machismo values of subjects through a 3-point Likert scale ranging from agree, disagree, and don't know. Responses to 10 statements were combined to create the composite variable 'machismo': Men need a variety of sexual partners; It is not macho to wear condoms; It is ok to have sex with someone else if in a relationship; Sexual impulses are hard to control when I'm sexually turned on; Men can have sex with men only if there are no women available; Anal sex is the most important form of sex; I have to be the inserting partner; A man who gives a blow job or is the "bottom" during anal sex with men is more of a woman than a man; I can't control my sexual impulses when I'm turned on by a man; I will have unprotected sex with an attractive man to keep him interested in me. Responses were assigned a quantitative value and combined to create a machismo scale ranging from 0 -10. Higher scores indicated greater machismo values.

Internalized homophobia. A composite variable 'internalized homophobia' was created to represent internalized negative attitudes about homosexuality. Six statements were rated on a 3-point Likert scale ranging from agree, disagree, and don't know. Statements included in the composite variable were: It is not appropriate for relationship between men to be long lasting; Families with homosexual relatives have reason to feel hurt and embarrassed; Men who feel sexually attracted to other men should feel ashamed; Homosexuals are normal; It is OK for the police to put pressure on homosexuals; I feel comfortable being seen in public with openly homosexual or effeminate men. Responses were assigned a quantitative value and combined to create a scale ranging from 0-6. Higher scores indicated greater internalized homophobia.

Homophobic Discrimination. Subjects were asked to respond to eight questions about their past and current experiences of discrimination on a 3 point Likert scale ranging from often, sometimes, or never. Eight statements were combined to create the composite variable 'sexual

discrimination': I have been laughed at, made fun of, or called names for my sexual orientation; I have been hit, beaten up, or physically threatened for my sexual orientation; I feel ashamed about my sexual orientation; My sexual orientation has hurt and embarrassed my family; I have moved because of my sexual orientation; I have moved away from family and friends because of sexual orientation; I have to pretend that I'm straight in order to be accepted; I have been pressured by the police because of my sexual orientation. Responses were assigned a quantitative value and added together to create a scale ranging from 0-20, where 0 represented an experience free from sexual discrimination, and 20 represented an experience that included a great deal of sexual discrimination.

Demographic Variables:

Demographic variables included: racial and ethnic background, highest grade completed in school, age, and monthly income.

Age. Respondents were asked to record the year that they were born.

Race. Respondents were asked "Which of the following most closely describes your racial/ethnic background?" with 7 options and an additional open space to record a race not listed.

Education. Respondents were asked "What is the highest grade you completed in school?" with responses ranging from "Less than the 8th grade" to "Graduate study or degree".

Income. Respondents were asked, "On average, how much do you make a month, with a range of "Less than \$500 per month", to "\$3000 or more per month". Monthly income was translated to yearly income for analysis and reporting purposes.

Analytic Techniques

SPSS 14.0 was used to analyze all data and construct tables; variables were labeled and recoded using syntax coded by hand. 'Don't know' responses were coded as missing for all

variables. Variables were recoded into categorical variables and analyzed as continuous when appropriate. Cut-off points were determined on the basis of the distribution of characteristics within categories using quartiles and median cutoffs. The crude association of each variable by risky sexual behavior was conducted using odds ratios and 95% confidence intervals. Logistic regression was used to sequentially adjust for demographic and psychosocial variables.

Results

Table 1 shows the characteristics of the study population. Most respondents identified their racial and ethnic background as either Hispanic/Latino Mestizo (44.2%), or Hispanic/Latino White (43%). The average age was 27 years. About 17% graduated from high school, 41.4% attended some college or achieved a technical degree, and 27.2% attained either a college or graduate degree. Despite a relatively high level of education, the greatest percentage of respondents reported earning between \$12,000-\$18,000 per year (24.5%), with 84.5% earning \leq \$30,000, and 15.5% earning $>$ \$30,000. Almost 60% of the sample population scored either low or medium on the acculturation scale (59.6), and low on the psychosocial scales for machismo (59.7%), sexual discrimination (59.9%), and internalized homophobia (71.8%). Based on the HIV/STD risk behavior composite variable, 65% percent of respondents were categorized as “at risk” for acquiring HIV and STDs, based on their behaviors.

Table 2 shows the crude association between HIV/STD risk and exposure variables. An association was found between race and HIV/STD sexual risk behaviors (OR=0.12 and CI=0.02-0.8). Similarly, men who reported high machismo values (OR=4.73 and CI=2.51-8.87) were over 4 times as likely to engage in behaviors that put them at risk for contracting HIV and other STDs. No statistically significant associations were found between HIV/STD risk and age, education level, income, acculturation, sexual discrimination, or internalized homophobia.

Table 3 shows crude and adjusted OR values. This model included all variables, and assessed the extent to which they related to one another. No significance was found between any of the demographic variables and HIV/STD risk; nor were there any significant associations between HIV/STD risk and the psychosocial variables ‘discrimination’ and ‘homophobia’. ‘Machismo’ was the only variable positively associated with HIV/STD risk ($OR_{adjusted}=5.53$, $CI=1.85-16.47$).

Further analysis was conducted to explore the limitations of our data. Psychosocial variables were coded as continuous to explore the magnitude of information lost due to the use of percentile and median cut off points; no additional significance was found (figure not presented). Homophobic discrimination and internalized homophobia were investigated as explanatory factors for machismo. Significant interactions were identified between machismo, and sexual discrimination and homophobia. These confounders lost their significance when we controlled for other factors.

Discussion:

HIV/STD risk is associated with high machismo values among Latino MSM. Previous studies assessing the impact of acculturation and psychosocial variables on sexual risk behaviors of Latino immigrant men and women are limited. This study provided a unique opportunity to assess the association between acculturation, three psychosocial behaviors (machismo, discrimination, and homophobia) and HIV/STD risk behavior.

Using logistic regression, we assessed each exposure variable independently, and found that crude odds ratios were significant for machismo values ($OR=.12$ $CI=0.02-0.80$), and race ($OR=2.51$ $CI=2.510-8.87$). We then used logistic regression to create a model by which we found an association between high machismo values and HIV/STD risk behaviors. Our model

indicated that men with high machismo values are over five times as likely to engage in behaviors that put them at risk for HIV and other STDs, than men with low machismo values.

According to our analysis, machismo values contribute to risky sexual behavior; this finding supports other Latino studies.^{73,74} For men with traditional values of what it means to be a man, sex may be a way to prove masculinity; furthermore it may be an activity that validates them as men.⁷⁵ While there are positive attributes that accompany machismo values, they can disempower men and their partners by being seemingly unattainable—they are left feeling as if they must always and continually prove their masculinity.⁷⁶ One explanation as to why no association was found between acculturation and machismo may be that areas highly concentrated with members of the Latino community are common in America, and that the existence of these communities facilitates the maintenance of values and practices central to Latino culture. It may be that as time in the United States elapses, assimilation with American culture does not occur as we would expect.

As a group Hispanic/Latinos face economic, social, psychological, and cultural barriers that not only limit their access to health care but also put them at higher risk for contracting HIV/AIDS.^{77,78,79} Acculturation and demographic variables including low income, lack of employment, low education level, and minority race/ethnic background have all been well documented and positively associated with poorer health outcomes, higher rates of HIV infection, and riskier sexual behavior.^{80,81,82,83,84,85} The findings of this study do not support previous findings. We hypothesize that this is related to the use of convenience sampling, and the resulting size and homogeneity of the study sample.

As a descriptive study with a small sample size, this study presents several limitations—therefore it is important to interpret the findings with caution, including lack of associations. Our

sample population focused on Latino MSM from three areas of Virginia. Therefore, our findings may not represent Latino MSM from other regions of the United States, or more culturally diverse groups or Latino MSM. Another limitation of our study is the use of self report to gather data about sexual behavior which can be a sensitive and private topic; while studies show that reliability of such measures are generally high, we can't be sure that social desirability bias did not influence our results. Additionally, exclusion criteria may have impacted our results—namely a cut off of 3 months for past sexual behavior resulting in the elimination of 36 participants (roughly 14%). We must consider that there could be significant differences between respondents who had sex in the past 3 months vs. those who had not (sex in the past 6 months). A final limitation of our study is the use of proxy measures for acculturation. While the measures that we used to proxy acculturation are standard, it is understood that they are somewhat limiting and do not necessarily measure what they are intended to measure. It has been said that “there is more to culture than the degree to which the individual assimilates, rejects, or is able to navigate U.S. and Latino culture.”⁸⁶ Acculturation is affected by individual characteristics like a persons age at arrival to the U.S, education level, number of years in the US, and other sociocultural barriers, as well as the environment that they are acculturating to (rural vs. urban).⁸⁷ It has also been shown that variations in health patterns among Hispanic and Latino groups vary considerably by ethnicity; for example Mexicans have a health advantage, while Puerto Ricans experience more health disparities. We did not examine the relationship between country of origin, and any of our variables.⁸⁸

Conclusion

Newly immigrated individuals often find themselves separated from family, coping with very real differences in environment and culture, socially isolated, and with a sense of

invisibility; all of these factors may lead to higher risk sexual practices.⁸⁹ Machismo values inherent to Latino culture also affect HIV/STD risk behaviors. Despite this study's lack of evidence that acculturation influences other psychosocial factors like machismo values, experienced sexual discrimination, and internalized homophobia we believe that these variables are very important to the larger picture of Latino Health. Given the complexity of cultural influences, sexuality, and sexual health, we hypothesize that our model was too simplistic to extract meaningful significance.

Our suggestions for future application and research include the need for Machismo to be incorporated into HIV and other STD reduction programming. Secondly, while this study provides an association between machismo values and risky sexual behaviors it does not provide a causal link. Further studies are needed to investigate the causal relationships that may exist between psychosocial factors and risky sexual behaviors that put Latino MSM at risk for contracting HIV and other sexually transmitted diseases.

References

1. CDC. HIV/AIDS Surveillance Report, 2004. Vol. 16. Atlanta: US Department of Health and Human Services, CDC; 2005: [1–46]. Also available at <http://www.cdc.gov/hiv/topics/surveillance/resources/reports.htm>. Accessed July 19, 2006.
2. CDC. HIV/AIDS Surveillance Report, 2004. Vol. 16. Atlanta: US Department of Health and Human Services, CDC; 2005: [1–46]. Also available at <http://www.cdc.gov/hiv/topics/surveillance/resources/reports.htm>. Accessed July 19, 2006.
3. Centers for Disease Control and Prevention. Cases of HIV infection and AIDS in the United States, by race/ethnicity, 2000–2004. HIV/AIDS Surveillance Supplemental Report 2006; 12(No. 1): [23–25]. Also available at: <http://www.cdc.gov/hiv/topics/surveillance/resources/reports/index.htm>. Accessed September 01, 2006.
4. Centers for Disease Control and Prevention. HIV/AIDS Surveillance Report, 2004. Vol. 16. Atlanta: US Department of Health and Human Services, Centers for Disease Control and Prevention; 2005:[35]. Also available at: <http://www.cdc.gov/hiv/stats/hasrlink.htm>. Accessed September 01, 2006.
5. Anderson RN, Smith BL. Deaths: leading causes for 2002. National Vital Statistics Report 2005; 53(17): 53, 56. Available at: http://www.cdc.gov/nchs/data/nvsr/53/nvsr53_17.pdf. Accessed September 03, 2006.
6. Census Bureau, Census 2000 Brief: Overview of Race and Hispanic Origin, 2000.
7. US Census Bureau. 2005 American Community Survey Data for the United States, and for Puerto Rico. Available at http://factfinder.census.gov/servlet/DT?_lang=en&-_geo_id=01000US&-ds_name=ACS_2005_EST_G00_&-redo Log=false&-mt_name=ACS_2005_EST_G2000_B03001. Accessed September 02, 2006.
8. U.S. Census Bureau, Population Division, Population Projections Branch. Available at <http://www.census.gov/population/www/projections/ppl47.html> Accessed September 02, 2006.
9. U.S. Census Bureau, 2004, "U.S. Interim Projections by Age, Sex, Race, and Hispanic Origin," Available at <http://www.census.gov/ipc/www/usinterimproj/>. Accessed September 02, 2006.
10. CDC. Healthy People 2010. HIV: 1(13). Available at <http://www.healthypeople.gov/document/html/volume1/13HIV.htm>. Accessed November 29, 2006.
11. CDC. Healthy People 2010. Sexually Transmitted Diseases: 2(25). Available at http://www.healthypeople.gov/document/html/volume2/25STDs.htm#_Toc489706316. Accessed November 29, 2006.
12. Finer L, Darroch J, Singh S. Sexual Partnership Patterns as a Behavioral Risk Factor For Sexually Transmitted Diseases. Family Planning Perspectives. Volume 31, Number 5, September/October 1999.
13. Lansky A, Thomas JC, Earp JA. Fam Plann Perspect. 1998 Mar-Apr;30(2):93-6. Partner-specific sexual behaviors among persons with both main and other partners.
14. Parazzini F, Cavalieri D'oro L, Naldi L, Bianchi C, Graefembergh S, Mezzanotte C, Pansera B, Schena D, La Vecchia C, Franceschi, S. Int J Epidemiol. 1995 Dec; 24(6):1197-203. Number of sexual partners, condom use and risk of human immunodeficiency virus infection.
15. CDC. Healthy People 2010. Sexually Transmitted Diseases: 2(25). Available at http://www.healthypeople.gov/document/html/volume2/25STDs.htm#_Toc489706316. Accessed November 29, 2006.
16. Cates W Jr. Contraception, contraceptive technology, and STDs. In: Holmes KK, Sparing PF, Mardh PA, et al, eds. Sexually Transmitted Diseases, 3rd ed. New York: McGraw-Hill, 1999:1067-78. 2.
17. Warner DL, Hatcher RA. Male condoms. In: Hatcher RA, Trussell J, Stewart F, et al, eds. Contraceptive Technology, 17th Revised Ed. NY: Irvington Publishers Inc., 1998:325-55.
18. Wagstaff DA, Kelly JA, Perry MJ, Sikkema KJ, et al. Multiple partners, risky partners and HIV risk among low-income urban women. Family Planning Perspectives, Nov 1995.
19. Kost K, Forrest JD. "American Women's Sexual Behavior and Exposure to Risk of Sexually Transmitted Diseases," Family Planning Perspectives, 24:244-254, 1992.; Fox KK, del Rio C, Holmes K, et al. Gonorrhea in the HIV era: A reversal in trends among men who have sex with men. Am J Public Health 2001;91:959-964.
20. Centers for Disease Control and Prevention. Primary and secondary syphilis among men who have sex with men - New York City, 2001. MMWR 2002;51:853-6.
21. Bacon O, Lum P, Hahn J, Evans J, Davidson P, Moss A, Page-Shafer K. Commercial sex work and risk of HIV infection among young drug-injecting men who have sex with men in San Francisco. Sex Transm Dis. 2006 Apr;33(4):228-34)
22. Parrado E, Flippen C, McQuiston C. Use of Commercial Sex Workers Among Hispanic Migrants In North Carolina: Implications for the Spread of HIV. Perspectives on Sexual and Reproductive Health. 2004 July/August; 36(4)
23. National Alliance of State and Territorial AIDS Directors (NASTAD), Addressing HIV/AIDS: Hispanic Perspectives & Policy Recommendations, Washington, DC: NASTAD, 2003.)
24. Brooks RA, Etzel MA, Hinojos E, Henry CL, Perez M. Preventing HIV Among Latino and African American Gay and Bisexual Men in a Context of HIV-Related Stigma, Discrimination, and Homophobia: Perspectives of Providers. AIDS Patient Care and STDs. Nov 2005; 19(11) : 737 -744
25. Díaz RM, Ayala G. Social discrimination and health: The case of Latino gay men and HIV risk. New York: Policy Institute of the National Gay and Lesbian Task Force; 2001.
26. Greene B. Ethnic-minority lesbians and gay men: mental health and treatment issues. J Consult Clin Psychol. 1994;62(2):243–251
27. HIV/STD Risks in young men who have sex with men who do not disclose their sexual orientation—six U. S. cities, 1994–2000. MMWR. 2003;52(05):81–86.
28. Kenamer JD, Honnold J, Bradford J, Hendricks M. Differences in disclosure of sexuality among African American and White gay/bisexual men: implications for HIV/AIDS prevention. AIDS Educ Prev. 2000;12(6):519–531.
29. Malebranche DJ. Black men who have sex with men and the HIV epidemic: next steps for public health. Am J Public Health. 2003;93(6):862–865.
30. Vargas JA. HIV-positive, without a clue black men's hidden sex lives imperiling female partners. Washington Post: August 4, 2003. Available from: CDC National Prevention Information Network: News Record #38309.

31. Díaz RM, Ayala G, Bein E, Henne J, Marin BV. The impact of homophobia, poverty and racism on the mental health of Latino gay and bisexual men: Findings from a probability sample in three U.S. cities. *Am J Public Health.* 2001;91(6):927-932.
32. Londono E. Aided by silence, HIV grows among Latinos. *Dallas Morning News.* October 14, 2003. Available from: CDC National Prevention Information Network: News Record #38837.
33. Diaz RM. Latino gay men and HIV: Culture, sexuality, and risk behavior. 1998. New York: Routledge Press.
34. Ramirez RL. What it means to be a man: Reflections on Puerto Rican masculinity. 1999. New Brunswick, NJ: Rutgers University Press.)
35. Marin BV, Gómez CA, Hearst N. Multiple heterosexual partners and condom use among Hispanics and non-Hispanic Whites. *Family Planning Perspectives.* 1993;25(4), 170-174.
36. Pleck JH, Sonenstein, FL, Ku LC. Masculinity ideology: Its impact on adolescent males' heterosexual relationships. *Journal of Social Issues.* 1993; 49(3): 11-29.
37. Krieger N. Embodying inequality: A review of concepts, measures, and methods for studying health consequences of discrimination. *International Journal of Health Sciences.* 29, 295-352.
38. Diaz RM, Ayala G, Marin BV. Latino gay men and HIV: Risk behavior as a sign of oppression. *Focus: A Guide to AIDS Research and Counseling,* 2000; 15(7), 1-4.
39. Delezaal C, Carballo-Diequez A, Nieves-Rosa L, Diaz F. Substance use and sexual risk behavior: Understanding their association among four ethnic groups of Latino men who have sex with men. *Journal of Substance Abuse,* 11, 323-336.
40. Diaz RM, Ayala G, Marin BV. Latino gay men and HIV: Risk behavior as a sign of oppression. *Focus: A Guide to AIDS Research and Counseling,* 2000; 15(7), 1-4.
41. Diaz RM. Latino Gay Men and HIV: culture, sexuality and risk behavior. New York: Routledge Press, 1998.
42. Díaz RM. Latino Gay Men and HIV: culture, sexuality and risk behavior. New York: Routledge Press, 1998.
43. Diaz R. Latino gay men and psycho-cultural barriers to AIDS prevention. In: Levin MP, Nardi PM, Gagnon JH, eds. *Changing Times: Gay Men and Lesbians Encounter HIV/AIDS.* Chicago: University of Chicago Press; 1997.
44. Marin G, Marin BV. Research with Hispanic Populations. Vol. 23. Newbury Park, CA: Sage; 1991. Research Methods Series.
45. CDC. Factsheets: HIV/AIDS among Hispanics. Available at <http://www.cdc.gov/hiv/resources/factsheets/hispanic.htm>. Accessed on November 21, 2006.
46. CDC. Factsheets: HIV/AIDS among Men Who Have Sex with Men. Available at <http://www.cdc.gov/hiv/resources/factsheets/hispanic.htm>. Accessed on November 21, 2006.
47. Richard A, Victor N. (1997) "Rethinking Assimilation Theory for a New Era of Immigration," *International Migration Review,* 31(4) 826-874.
48. Abraido-Lanza AF, Armbrister AN, Florez KR, Aguirre AN. *Am J Public Health.* Toward a theory-driven model of acculturation in public health research. 2006 Aug;96(8):1342-6. Epub 2006 Jun 29.
49. Abraido-Lanza AF, Armbrister AN, Florez KR, Aguirre AN. *Am J Public Health.* Toward a theory-driven model of acculturation in public health research. 2006 Aug;96(8):1342-6. Epub 2006 Jun 29.
50. Henry J. Kaiser Foundation. Assimilation and Language. Survey Brief March 2004. Available at <http://pewhispanic.org/files/reports/15.10.pdf#search=%22clark%20%2C%20hofsess%20.%20Acculturation%22>. Accessed November 29, 2006.
51. Lara M, Gamboa C, IyaKahramanian M, Morales LS, Hayes Bautista DE. *Rand Health.* Acculturation and Latino Health in the United States: A Review of the Literature and its Sociopolitical Context *Annu. Rev. Public Health* 2005. 26:367-97. Available at http://www.rand.org/pubs/reprints/2005/RAND_RP_117_7.pdf. Accessed November 29, 2006.
52. Abraido-Lanza, AF., Chao, MT., Florez, KR. Do healthy behaviors decline with greater acculturation? Implications for the Latino mortality paradox. *Soc Sci Med.* 2005 Sep;61(6):1243-55. Epub 2005 Mar 3.
53. Bethel JW, Schenker MB. Acculturation and smoking patterns among Hispanics: a review. *Am J Prev Med.* 2005 Aug;29(2):143-8.
54. Mainous AG, Majeed A, Koopman RJ, Baker R, Everett CJ, Tilley BC, Diaz VA. Acculturation and diabetes among Hispanics: evidence from the 1999-2002 National Health and Nutrition Examination Survey. *Public Health Rep.* 2006 Jan-Feb;121(1):60-6.
55. Hubert HB, Snider J, Winkleby MA. Health status, health behaviors, and acculturation factors associated with overweight and obesity in Latinos from a community and agricultural labor camp survey. *Prev Med.* 2005 Jun;40(6):642-51.
56. Abraido-Lanza, AF., Chao, MT., Florez, KR. Do healthy behaviors decline with greater acculturation? Implications for the Latino mortality paradox. *Soc Sci Med.* 2005 Sep;61(6):1243-55. Epub 2005 Mar 3.
57. Sabogal F, Faigles B, Catania JA. Data from the National AIDS Behavioral Surveys. II. Multiple sexual partners among Hispanics in high-risk cities. *Fam Plan Perspect.* 1993 Nov-Dec;25(6):257-62.
58. Sabogal F, Faigles B, Catania JA. Data from the National AIDS Behavioral Surveys. II. Multiple sexual partners among Hispanics in high-risk cities. *Fam Plan Perspect.* 1993 Nov-Dec;25(6):257-62.
59. Hines AM, Caetano R. Alcohol and AIDS-related sexual behavior among Hispanics: Acculturation and gender differences. *AIDS Educ Prev* 1998; 10:533-547.
60. Berrigan D, Dodd K, Troiano RP, Reeve BB, Ballard-Barbash R. Physical activity and acculturation among adult Hispanics in the United States. *Res Q Exerc Sport.* 2006 Jun;77(2):147-57.
61. Marks G, Cantero PJ, Simoni JM. Is acculturation associated with sexual risk behaviors? An investigation of HIV-positive Latino men and women. Department of Preventive Medicine, University of Southern California, USA.
62. Diaz R. M. Latino gay men and HIV: Culture, sexuality, and risk behavior. 1998. New York: Routledge.
63. Levy V, Page-Shafer K, Evans J, Ruiz J, Morrow S, Reardon J, Lynch M, Raymond HF, Klausner J D, Facer M, Molitor F, Allen B, Ajufo BG, Ferrero D, Sanford GB, McFarland W. HIV-related risk behavior among Hispanic immigrant men in a population-based household survey in low-income neighborhoods of northern California. *Sexually Transmitted Diseases.* 2005; 32(8):487-490.

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64. Jarama LS, David KJ, Poppen PJ, et al. Psychosocial, behavioral, and cultural predictors of sexual risk for HIV infection among Latino men who have sex with men. *AIDS and Behavior*. 2005; 9(4): 513-523.
 65. Diaz, RM., Ayala, G., Bein, E. Sexual risk as an outcome of social oppression: data from a probability sample of Latino gay men in three U.S. cities. *Cultur Divers Ethnic Minor Psychol*. 2004 Aug;10(3):255-67.
 66. Hernandez O, Torres G. Internalized oppression and high-risk sexual practices among homosexual and bisexual males. *Mexico Rev Saude Publica*. 2005 Dec;39(6):956-64. Epub 2005 Dec 7.
 67. Organista KC, Organista PB, Migrant laborers and AIDS in the United States: a review of the literature, *AIDS Education and Prevention*, 1997, 9(1):83-93.
 68. Mishra S, Conner RF, Magaña RJ, eds., *AIDS Crossing Borders: The Spread of HIV Among Migrant Hispanics*, Boulder, CO: Westview Press, 1996
 69. Catania JA, Gibson DR, Marin B, Coates TJ, Greenblatt RM. Response bias in assessing sexual behaviors relevant to HIV transmission. *Eval Program Planning* 1990; 13: 19-29.
 70. Jarama S, Kennamer D, Honnold J, Susan K, Bradford J. *Latino Men who have Sex with Men: Report*. Virginia Commonwealth University Survey and Evaluation Research Laboratory. 1999.
 71. Jarama S, Kennamer D, Honnold J, Susan K, Bradford J. *Latino Men who have Sex with Men: Report*. Virginia Commonwealth University Survey and Evaluation Research Laboratory. 1999.
 72. Garofalo R, Deleon J, Osmer E, Doll M, Harper GW. Overlooked, misunderstood and at-risk: Exploring the lives and HIV risk of ethnic minority male-to-female transgender youth. *Journal of Adolescent Health*. March 2006; 38(3):230-236.
 73. Marín, BV, Gómez CA, Hearst N. Multiple heterosexual partners and condom use among Hispanics and non-Hispanic Whites. *Family Planning Perspectives*. 1993;25(4): 170-174.
 74. Pleck JH, Sonenstein FL, Ku LC (1993). Masculinity ideology: its impact on adolescent males' heterosexual relationships. *Journal of Social Issues*.1993;25(4): 170-174.
 75. Nemoto T, Operario D, Keatley J, Han L, Soma T. HIV Risk Behaviors Among Male-to-Female Transgender Persons of Color in San Francisco. *American Journal of Public Health*. 2004; 94(7):1193-1199.
 76. Marín, BV. HIV prevention in the Hispanic community: sex, culture, and empowerment. *Journal of Transcultural Nursing* 2003 Jul;14(3):186-92.
 77. Kirby JB, Taliaferro G, Zuvekas SH. Explaining Racial and Ethnic Disparities in Health care. *Med Care*. 2006 May; 44(5 Suppl):164-72.
 78. Jarama SL, Kennamer JD, Poppen PJ, Hendricks M, Bradford J. Psychosocial, Behavioral, and cultural predictors of sexual risk for HIV infection among latino men who have sex with men. *AIDS Behav*. 2005 Dec;9(4):513-23.
 79. Diaz RM, Ayala G. Love, passion, and rebellion: Ideologies of HIV risk among Latino gay men in the USA. *Culture, Health, and Sexuality*. 1999;1: 277-293.
 80. Smedley BD, Syme SL, eds. *Institute of Medicine. Promoting health: Intervention strategies from social and behavioral research*. Washington, DC: 2001. National Academies Press.
 81. Janssen M, DeWitt J, Stroebe W, VanGriensven F. Educational status and risk of HIV in young gay men. *Journal of Health Psychology*. 2000;5: 487-499.
 82. Kalichman SC, Nachimson D, Cherry C, Williams E. AIDS treatment advances and behavioral prevention setbacks: Preliminary assessment of reduced perceived threat of HIV-AIDS. *Health Psychology*. 1998;17: 546-550.
 83. McAuliffe TL, Kelly JA, Sikkema, KJ, Murphy DA, Winett RA, Solomon LJ, Roffman RA. Sexual HIV risk behavior levels among young and older gay men outside of AIDS epicenters: Findings of a 16-city sample. *AIDS and Behavior*. 1999;3: 111-119.
 84. Satcher D. Eliminating racial and ethnic disparities in health: the role of the ten leading health indicators. *J Natl Med Assoc*. 2000;92:315-8. [PubMed]
 85. National Center for Health Statistics. *Health, United States 1998, with Socioeconomic Status and Health Chartbook*. Hyattsville, MD: Centers for Disease Control; 1998.
 86. Zea MC, Reisen CA, Diaz RM. Methodological issues in research on sexual behavior with Latino gay and bisexual men. *American Journal of Community Psychology*. June 2003; 31 (3/4).
 87. North American Primary Care Research Group. Research involving Latino populations. *Annals of Family Medicine* 2005; 3: 470-471.
 88. Abraido-Lanza AF, Chao MT, Florez KR. Do healthy behaviors decline with greater acculturation?: Implications for the Latino mortality paradox. *Social Science and Medicine*. 2005; 61(6), 1243-1255.
 89. Mishra S, Conner RF and Magaña RJ. *AIDS Crossing Borders: The Spread of HIV Among Migrant Hispanics*. Boulder, CO: Westview Press, 1996)
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TABLE 1: Characteristics of the Study Population

Variable	Total	
	N	V%
Race		
Hispanic/latino Black	20	8.30
Hispanic/latino mesti	107	44.20
Hispanic/latino white	104	43.00
Other	11	4.50
Missing	13	5.10
Age		
<25	47	20.10
25-35	133	56.80
>35	54	23.10
Highest Grade Completed		
Less than Highschool	35	14.60
Highschool Graduate	40	16.70
Some College/Assoc	99	41.40
College Degree and A	65	27.20
Income per Year		
<15000	108	49.10
15,000-24,000	78	35.50
> 24,000	34	15.50
Acculturation		
	N	V%
Low	64	33.20
Medium	51	26.40
High	78	40.40
Machismo		
Low	142	59.70
High	96	40.30
Sexual Discrimination		
Low	127	59.90
High	85	40.10
Internalized Homophobia		
Low	183	93.40
High	13	6.60
Sexual Risk Behavior		
No Risk	89	34.90
Risk	166	65.10

Table 2: Crude Odds Ratios for Risk

Variable	Total (N)	Risk Value		Odds Ratio	95% CI
		Yes	No		
Race					
Hispanic/latino Black	20	6	14	0.51	0.14 , 1.83
Hispanic/latino mestizo	107	37	70	0.94	0.44 , 2.04
Hispanic/latino white	104	34	70	1.00	
Other	11	6	5	0.12	0.02 , 0.80
Age					
<25	47	15	32	0.93	0.30 , 2.9
25-35	133	48	85	0.89	0.36 , 2.2
>35	54	18	36	1.00	
Highest Grade Completed					
Less than Highschool	35	11	24	2.24	0.57 , 8.8
Highschool Graduate	40	12	28	1.36	0.40 , 4.7
Some College/Associates or other Tech	99	33	66	1.09	0.45 , 2.7
College Degree and Above	65	25	40	1.00	
Income per Year					
<15,000	108	38	70	0.968	0.226 , 4.15
15,000-24,000	78	24	54	1.49	0.421 , 5.27
> 24,000	34	14	20	1.00	
Acculturation					
Low	64	23	41	0.62	0.299 , 1.26
Medium	51	21	30	0.49	0.232 , 1.05
High	78	20	58	1.00	
Machismo					
Low	111	69	73	1.00	
High	108	16	81	4.73	2.510 , 8.87
Sexual Discrimination					
Low	127	51	76	1.00	
High	85	23	62	1.81	0.997 , 3.282
Internalized Homophobia					
Low	183	63	120	1.00	
High	13	3	10	1.75	0.465 , 6.589

Table 3: Crude and Adjusted Odds Ratios for Risk (by variable)

Variable	Total (N)	Risk Value		Odds Ratio	95% CI	Adjusted Odds Ratio	95% CI
		Yes	No				
Race							
Hispanic/latino Black	20	6	14	0.51	0.14 , 1.83	0.44	0.09 , 2.21
Hispanic/latino mestizo	107	37	70	0.94	0.44 , 2.04	0.89	0.33 , 2.42
Hispanic/latino white	104	34	70	1.00		1.00	
Other	11	6	5	0.12	0.02 , 0.80	0.31	0.04 , 2.63
Age							
<25	47	15	32	0.93	0.30 , 2.9	2.19	0.50 , 9.61
25-35	133	48	85	0.89	0.36 , 2.2	1.63	0.52 , 5.12
>35	54	18	36	1.00		1.00	
Highest Grade Completed							
Less than Highschool	35	11	24	2.24	0.57 , 8.8	6.54	0.63 , 67.95
Highschool Graduate	40	12	28	1.36	0.40 , 4.7	1.54	0.25 , 9.46
Some College/Associates or other Technical Degree	99	33	66	1.09	0.45 , 2.7	1.16	0.31 , 4.32
College Degree and Above	65	25	40	1.00		1.00	
Income per Year							
<15000	108	38	70	0.968	0.226 , 4.146	0.62	0.11 , 3.53
15,000-24,000	78	24	54	1.49	0.421 , 5.269	1.12	0.27 , 4.57
> 24,000	34	14	20	1.00		1.00	
Acculturation							
Low	64	23	41	0.62	0.299 , 1.26	0.43	0.12 , 1.60
Medium	51	21	30	0.49	0.232 , 1.05	0.55	0.19 , 1.61
High	78	20	58	1.00		1.00	
Machismo							
Low	111	69	73	1.00		1.00	
High	108	16	81	4.73	2.510 , 8.87	5.53	1.85 , 16.47
Sexual Discrimination							
Low	127	51	76	1.00		1.00	
High	85	23	62	1.81	0.997 , 3.282	1.50	0.61 , 3.74
Internalized Homophobia							
Low	183	63	120	1.00		1.00	
High	13	3	10	1.75	0.465 , 6.589	1.23	0.10 , 14.51