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Permalink

<https://escholarship.org/uc/item/231790c0>

Journal

Behavioral Medicine, 45(1)

ISSN

0896-4289

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Publication Date

2019-01-02

DOI

10.1080/08964289.2018.1447906

Peer reviewed



Published in final edited form as:

Behav Med. 2019 ; 45(1): 52–61. doi:10.1080/08964289.2018.1447906.

Behavioral, Psychological, Gender, and Health Service Correlates to Herpes Simplex Virus Type 2 Infection among Young Adult Mexican-American Women Living in a Disadvantaged Community

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Abstract

Herpes simplex virus type 2 (HSV-2) is among the most prevalent sexually transmitted infections in the United States. Despite this, there has been limited research on the correlates to HSV-2 among disadvantaged and marginalized women, particularly among Latinas. Data for the present analysis include 125 young adult Mexican-American women enrolled in a longitudinal study in a disadvantaged urban community in San Antonio, Texas. The current rate of tested HSV-2 infection is 56.8%. Our findings suggest strong comorbidity of genital herpes with injecting heroin use, Hepatitis C, sexual violence, incarceration, and mental illness. Contributing to this population's nexus of risk are the low rates of health service utilization among those infected with HSV-2. Integration between behavioral health and primary care, including access to preventative services, are essential for improving the health of Latinas living in disadvantaged neighborhoods.

Keywords

HSV-2; Mexican Americans; IPV; Health service utilization; IDU; Drug use; Mental health

Conflict of Interest: The authors declare that they have no conflict of interest.

INTRODUCTION

While rates of sexually transmitted infections (STI) within the United States have decreased overall within the past several decades, herpes simplex virus type 2 (HSV-2) has remained relatively stable¹ with more than 24 million estimated new and existing cases.² Subclinical manifestations of HSV-2 are particularly concerning given the documented heightened risk of HIV acquisition among HSV-2 infected individuals.^{3,4} Due to this relationship with HIV, the majority of HSV-2 research has focused on international populations, mainly in Africa,^{5,6} and among men who have sex with men (MSM).^{7,8} Although research indicates women are particularly susceptible for HSV-2,^{9,10} less attention has been given to correlates of HSV-2 among women in the United States, particularly among Mexican-American women.

Mexican-American women

According to the limited research available, demographic risk factors for HSV-2 among U.S. women include being a racial/ethnic minority,^{9,11,12} having less education,¹³ and living in an urban setting.¹⁴ Nationally, Mexican-American women have twice the rate (13.2%) of HSV-2 seropositivity than Mexican-American men (7.5%).¹⁵ The number of lifetime sexual partners is also often found to be a behavioral risk factor for HSV-2 infection. Among non-Hispanic white and non-Hispanic black adults aged 18 to 49, there is a clear gradient whereby a higher number of sex partners is associated with higher rates of infection.¹⁵ However, there is not a clear gradient for Mexican Americans. Mexican-American and African-American women with a history of STIs and sexual or physical abuse are also at an increased risk for contracting HIV and STIs.¹⁶ However, compared to African-American adolescent women, Mexican Americans were found to have greater environmental risks (i.e., unemployment, runaway, school dropouts) and experience more sexual risks (i.e., substance and alcohol use, sex with an injection drug user, condomless sex).¹⁶ This suggests that other behavioral and psychological risk factors may be more important to understanding HSV-2 serostatus among Mexican-American women.

Behavioral and psychological risks

Des Jarlias et al.¹⁷ recruited 1,418 noninjecting drug users from a drug detoxification program in New York City. They found a 61% HSV-2 prevalence with women (85%) and MSM (72%) having significantly higher rates compared to male non-MSM (50%). Additional risk factors included black race, older age, and crack cocaine use. However, among a sample of mostly white (94.2%) rural Appalachian drug users, the tested prevalence rate of HSV-2 was 14.4%.¹⁸ Further, in a study of 100 female arrestees recruited from an Indianapolis court, a 61% prevalence was documented.¹⁹ In addition to drug use and criminal justice involvement, mental health and psychiatric disorders, in general, are also related to STI risk.²⁰ For example, depression and PTSD are associated with HSV-2 serostatus, specifically, among female veterans.¹⁴ In fact, the aforementioned factors, as well as violent victimization, are often syndemic among women.²¹⁻²⁴ Given the unique gendered context of this syndemic for marginalized Mexican-origin women,^{25,26} these may be important factors for HSV-2 among this population.

Gender-related risks

Women's social status and women's roles affect sexual risk behaviors.²⁷ In general, risky sexual behaviors and ever experiencing sexual violence increase the likelihood of HSV-2 infection.^{14,18} For instance, among 205 women in Washington State, Hispanic ethnicity was associated with HSV-2 infection, and Hispanic women who experienced physical and or sexual abuse were more likely to test positive for an STI than non-abused Hispanic women.¹² Another study conducted with a low-income community-based sample of Latinas documented that intimate partner violence was associated with sexual risk, including high STI/HIV risk perceptions and gender-based risk such as sexual control by male partners and male partner infidelity.²⁸ Nevertheless, high maternal attachment in ethnic minority women, especially in regard to open communication about sexual risk, has been identified as a protective factor in decision-making and negotiation of risky sexual behaviors.²⁹

Gender-based power imbalances help explain health outcomes for racial/ethnic minority women, particularly with regards to their sexual and reproductive health.³⁰ Research has documented a significant relationship between women's increased sexual relationship power and decreased intimate partner violence victimization.^{31,32} Past studies have also indicated that traditional gender norms and relationship power may influence condom negotiation among Latina women and their partners.³³ Therefore, it is important to consider how gender attitudes, sexual relationship power, maternal attachment, and sexual violence are associated with HSV-2 seropositivity for Mexican-American women.

Health service-related risks

Currently, Hispanics comprise 17% of the overall U.S. population but account for 32% of the nonelderly uninsured population.³⁴ Hispanics are the fastest growing racial or ethnic population in the United States and, if current trends hold, Latinas will comprise 25% of all U.S. women.³⁵ Irrespective of health coverage, Latinas are less likely to utilize preventative sexual and reproductive health screenings.^{36,37} Of note, the State of Texas (the site of the current study) has the highest proportion of uninsured women of any state and consistently ranks poorly with regard to sexual and reproductive health care.³⁸ This is important because an estimated 87.4% of 14 to 49 year olds infected with HSV-2 have never received a clinical diagnosis.³⁹ Knowing HSV-2 serostatus is essential because even if a person is asymptomatic, they can still infect sex partners, and suppressive antiviral therapy is available to reduce transmission.

Specific aims

While most available studies on HSV-2 in the United States largely rely on population-based data, there is growing research being conducted with community based and marginalized groups. This endeavor is imperative because these populations are often excluded from conventional household surveys due to criminal justice involvement, drug use, and/or residential instability,⁴⁰ and rarely receive health care services due to lack of coverage.⁴¹ The current study adds to this growing knowledge base by examining the behavioral, psychological, gender, and health service correlates to HSV-2 serostatus among Mexican-American women living in an urban disadvantaged community.

METHODS

Procedure

The San Antonio Latina Trajectory Outcomes (SALTO) study is a longitudinal community based study examining the long-term health outcomes of drug use and intimate partner violence among a cohort of 150 Mexican American women that were originally interviewed as adolescents between 1999-2001.⁴² The San Antonio population is more than 1 million, of which more than 50% is of Mexican descent.⁴³ San Antonio is among the top 10 cities in the United States with the largest number of people living in distressed zip codes and it has the highest level of spatial inequality between zip codes.⁴⁴ The most distressed zip code was the site for the current study.

The ongoing study employed a concurrent mixed-method nested longitudinal cohort design including the collection of biological, survey, and qualitative data. Data from the original sample collected over 15 years ago served as Time 1 (adolescence); Time 2 is being collected using the Natural History Interview (NHI) technique^{45,46} covering the 15-year retrospective period; and current (past year) data at the time of the most recent interview served as Time 3. Data for the present analysis come from Time 3 questionnaire survey items, standardized scales, and biological specimens collected to date from 125 young adult women the team has successfully relocated and reinterviewed. All study protocols were approved by the Institutional Review Board at the University of Southern California and informed written consent was obtained from all individual participants included in this study.

Data was collected on demographics, incarceration history, sexual behaviors and risks, intimate partner violence, mental health, gender, health service utilization, and self-reported drug use histories. Biological specimens were also collected, including HSV-2 type-specific IgG antibody test with an index ratio > 0.9 (Chemiluminescent immunoassay (CLIA), DiaSorin Liaison XL Analyzer); HIV antibody using enzyme linked immunoassay (EIA) and confirmed with by Western Blot for HIV1 and HIV2; HCV antibody assays using Abbott HCV EIA 3.0 procedure for encoded antigens (recombinant c100-3, HC-31, and HC-34) confirmed by RIBA; and a PCR (Polymerase Chain Reaction) test technique for molecular detection of the bacterial DNA using 10 ml of urine for *Neisseria gonorrhoea* (NG) and *Chlamydia trachomatis* (CT) screenings. It should be noted that while 125 women have been interviewed thus far, biological specimens were not collected for 10 women. Of these women, 2 had collapsed veins and blood was not able to be drawn, 4 refused to consent to laboratory testing, and 4 partially completed their interview (without laboratory testing) but have not yet been rescheduled to complete it.

Measures

Standard measures of age (continuous), years of school completed (continuous), marital status (single, separated/divorced/widowed, and married/cohabitating), and number of children (including biological, step, and adopted) were assessed. The measure of unstably housed (0 = no, 1 = yes) included reports of living most of the previous year in a halfway house, motel, jail, or three or more locations compared to living most of the year at one or

two residences including own home or with a friend, partner, parent, or other relative. Employment included three categories: full-time/part-time, unemployed, and not in labor market (e.g., homemaker, disabled).

Current drug use was assessed as past year use of marijuana, methamphetamines, cocaine/crack, and injection heroin. Total years of incarceration was calculated as the total time spent imprisoned across incarceration episodes (up to 10 episodes lasting 30 days or longer) as reported during an incarceration history questionnaire. This measure represented total lifetime exposure to jail and prison conditions. The total number of incarceration episodes lasting 30 days or longer was also included (0 episodes, 1 episode, 2 or more episodes) as well as a bivariate measure of lifetime incarceration. There were five measures of sexual risk: having no sex partners in the past year (bivariate), not in a current “dating” relationship (bivariate), number of sex partners in the past year (continuous), never using a condom in the past year (bivariate), and ever having a same-sex sexual encounter (bivariate).

Depression was measured using the eight-item version⁴⁷ of the Center for Epidemiological Studies Depression Scale (CES-D), which measures depressive symptomatology, not a clinical diagnosis of depression ($\alpha = 0.92$).⁴⁸ PTSD was measured using the PTSD Checklist - Civilian Version (PCL-C), a 17-item scale of self-reported PTSD symptoms based on DSM-IV criteria ($\alpha = 0.95$).^{49,50} Unlike other versions of the PCL, the PCL-C measures symptoms in relation to “stressful experiences” to account for multiple traumas, in order to be used by any population.^{51,52} Psychological distress was measured using the 28-item version of the General Health Questionnaire (GHQ-28).⁵³ An overall symptom score for psychological distress was included ($\alpha = 0.93$).

Traditional gender ideology was measured with the Attitudes towards Women Scale (AWS).^{54,55} The AWS uses 15 items to assess the participants’ feelings about appropriate roles for women. Higher scores indicate a traditional, conservative attitude and lower scores a pro-feminist, egalitarian attitude towards women ($\alpha = 0.67$; range 0 to 59). The 23-item Sexual Relationship Power Scale (SRPS) contains two subscales: Relationship Control and Decision-Making Dominance.⁵⁶ The SRPS was assessed for the current relationship ($\alpha = 0.94$; range 0 to 45). Intimate partner violence (IPV) was assessed using the Revised Conflict Tactics Scale victimization items.⁵⁷ Past year prevalence for the five subscales were reported: negotiation, psychological aggression, physical assault, sexual coercion, and injury. The reliability for the prevalence subscales ranged from 0.76 to 0.85. Sexual coercion was more closely examined by developing scales for past year frequency and severity following suggested scoring.⁵⁸ Maternal attachment was also included and was measured using the Mother-Daughter Relationship Scale (MDRS).^{59,60} The MDRS consists of nine items that reflect the daughter’s assessment of the overall quality of the socio-emotional support of her mother ($\alpha = 0.88$; range 0 to 36).

We used self-reported measures of health and social services utilization and accessibility. Our measures solicited information regarding health insurance, medical expenses, and accessibility of health services. We also collected health services utilization on a continuum of discretionary utilization (e.g. drug treatment, prevention care, outpatient care) to non-discretionary utilization (e.g. emergency room, hospitalization).

Analytic plan

A bivariate analysis compared all study variables across HSV-2 serostatus using a two-tailed t-test for continuous variables and a chi square test for independence for categorical variables. The effect size was calculated for continuous variables using Cohen's d with z-score transformed variables and bootstrapped standard errors reported. The effect size was standardized to make comparisons across variables with different ranges of measurement.⁶¹ In this preliminary descriptive study, we reported the exact p-value and argue that $p < 0.10$ is suggestive of a significant association that warrants further study.⁶² We also followed Cohen's convention for interpreting the magnitude of an effect for Cohen's d (0.20=small, 0.50=medium, 0.80=large) because it is a commonly used benchmark in social behavioral research.^{63,64} Consistent with previous reporting, we contend that an effect size around 0.50 or greater suggests a non-trivial, clinically relevant finding that necessitates future examination.⁶⁵ The effect size for categorical variables was reported as binary odds ratios (OR).

RESULTS

The seroprevalence of HSV-2 was 56.8% ($n = 63$; 3 tests had inconclusive results). There was not a significant level of co-infection with Chlamydia (6.7% HSV-2+ vs. 5.4% HSV-2-, $p = 0.782$) or Gonorrhea (5.4% vs. 2.2%, $p = 0.422$). However, there appeared to be a pattern of co-infection with HCV (29.8% vs. 10.9%, $p = 0.020$). Two cases of HIV were documented (1.8%) and co-infection with HSV-2 was present.

Our study found a number of demographic correlates to HSV-2 seropositive status (Table 1). Seropositivity was associated with younger age, fewer years of schooling, and higher number of children. These women ranged in age from 29 to 43 years (Interquartile Range (IQR) = 31, 34). On average, seropositive women were one year younger than seronegative women ($t = 2.44$, $p = 0.016$) with a standardized effect size of $d = 0.47$. Overall the women in this study had low levels of education (mean = 11.0 years, range 6 to 16 years, IQR = 10, 12) with seropositive women having a lower number of years of school completed ($d = 0.51$, $p = 0.014$). One-half of seropositive women did not earn a high school degree or general equivalency degree (GED) compared to one-third of seronegative women ($\chi^2 = 2.81$, $p = 0.094$). The overall median number of children was 3 with a range of 0 to 7 (IQR = 2, 4). Seropositive women had a higher number of children with a standardized effect size of -0.38 ($p = 0.048$). There were no substantive differences in marital status, unstable housing, and employment.

HSV-2 positive Latinas had unique behavioral risks including a higher prevalence of injection heroin use and increased incarceration histories. While there were no substantive differences in past year drug use, HSV-2 positive women reported higher lifetime rates of injecting heroin use (29.0% vs. 8.7%, $\chi^2 = 6.73$, $p = 0.009$). Women with a history of injection heroin use had 4.30 times the odds of testing positive for herpes. This behavior likely explains the documented comorbidity of HSV-2 and HCV. When examining any incarceration spell, there were no substantive differences between the two groups of women; however, there were substantive differences when restricting the incarceration spells to 30 days or longer ($\chi^2 = 8.42$, $p = 0.015$). One-quarter of seropositive women completed two or

more incarceration spells lasting 30 days or longer compared to 8.3% of seronegative women. Put another way, women with histories of serial incarceration had 3.74 times the odds of testing positive for herpes ($p = 0.027$).

Among the gender specific risk variables, having traditional attitudes towards women was associated with HSV-2 infection ($d = -0.37$, $p = 0.045$) such that seropositive women had more traditional (rather than feminist) attitudes towards women. These women also reported a lower attachment to their mother ($d = 0.34$, $p = 0.083$). There were no substantive differences in sexual relationship power.

Seropositive status was associated with a higher average number of sex partners in the past year ($d = -0.26$, $p = 0.081$) and reporting not being in a current relationship ($OR = 0.40$, $p = 0.077$). Seropositive women also reported higher prevalence of sexual coercion during the past year (63.0% vs. 42.9%, $\chi^2 = 3.60$, $p = 0.058$). Women who experienced sexual coercion had 2.28 times the odds of testing positive for HSV-2. According to Straus and Douglas,⁵⁸ examples of “severe” forms of sexual coercion were: “My partner used force (like hitting, holding down, or using a weapon) to make me have sex” and “My partner used threats to make me have sex.” An example of “minor” sexual coercion was “My partner insisted on sex when I did not want to (but did not use physical force).” In total, 50.0% of seropositive women reported “severe” sexual coercion (being raped by their partner) in the past year compared to 38.1% of seronegative women. Also of note, 12 seropositive women reported being forced to have sex without a condom. Consequently, seropositive women reported significantly higher symptomatology associated with depression ($d = -0.45$, $p = 0.023$) and psychological distress ($d = -0.43$, $p = 0.030$).

Table 2 presents bivariate associations with health service utilization. It is alarming that only nine of 63 seropositive women self-disclosed that they had been diagnosed with herpes by a medical professional. Seropositive women, however, had different patterns of health coverage ($\chi^2 = 8.13$, $p = 0.017$). Seropositive women had 2.43 times the odds of reporting public coverage and 0.25 times the odds of reporting private coverage. Overall, less than half of the women in this study had health coverage at the time of the interview and were covered consistently for the previous 12 months. Less than one-half of seropositive women (46.8%) reported having a routine health check-up ($OR = 0.52$, $p = 0.095$) while one-third (37.3%) reported having a well women’s exam ($OR = 0.41$, $p = 0.030$) during the past year—both were significantly lower compared to seronegative women. Additionally, women were asked where they would go to seek care for a non-emergency health issue and a significant pattern emerged across response categories ($\chi^2 = 17.90$, $p = 0.001$). Seropositive women had lower odds of reporting the doctor’s office ($OR = 0.29$, $p = 0.004$) and higher odds of reporting the emergency room ($OR = 5.91$, $p = 0.001$) compared to seronegative women. Four seropositive women reported they simply would not seek care for their health problem.

DISCUSSION

Our findings give insight into distinct patterns of behavioral, psychological, gender, and health service utilization factors associated with HSV-2 infection among Mexican-American young adult women living in a disadvantaged urban context. The current rate of HSV-2

infection (56.8%) in our sample is much higher than the 15.7% population based prevalence estimates.⁶⁶ Nationally, HSV-2 seroprevalence among Mexican Americans is 11.7%.¹¹ However, the documented prevalence is more comparable to existing community based studies of urban drug and crime involved populations.^{17,19} Only 14.3% of seropositive women reported being told by a doctor or health care professional they had genital herpes, which is consistent with population data from the National Health and Nutrition Examination Survey.¹ Although HIV (n = 2) and HSV-2 comorbidity was not manifested in our sample, co-infection with HCV was documented.

It is evident from the results that women with injection heroin use and incarceration histories are more susceptible to HSV-2 infection with HCV co-infection. This is in contrast to previous research by Des Jarlais et al.⁶⁷ that did not find an association between HSV-2 status (39%) and HCV (55%) among injecting drug users. Seropositive women had overall higher lifetime rates of injection heroin use than their non-infected counterparts, which is particularly alarming due to the association with heightened risk for HIV, compromised immune systems, and disease progression.¹⁷ While there was a low prevalence of HIV in the sample, HIV behavioral and transmission risks (e.g., sharing of needles and syringes, unprotected sex) were common. This is further confounded by the histories of serial incarceration reflective of these women's past that may expose them to these additional health risks.⁶⁸ Research documents that incarceration is an independent risk factor for HIV/AIDS and STIs, in part, because incarceration disrupts stable sex partnerships.⁶⁹

Detrimental sexual violence experiences are evident among the HSV-2 positive sub-group. These patterns will be further examined during the course of the study, given that previous research has documented how sexual relationship power can contribute to fear in condom negotiation and increase women's risk for violence.^{70,71} Moreover, victims of intimate partner violence are at higher risk for HIV and STIs, central nervous system problems, stress related conditions,⁷² and reproductive health outcomes including induced abortion, sexual dysfunction, and inconsistent condom use.⁷³ Related to trauma and HIV/STI risk are high rates of mental illness,⁷⁴⁻⁷⁶ especially among criminal justice involved women.⁷⁷ Indeed, HSV-2 seropositive women endorsed significantly higher depression and psychological distress symptomatology. In sum, these findings suggest strong comorbidity of HSV-2 with injecting heroin use, sexual violence, incarceration, and mental illness among disadvantaged Mexican-American women.

Finally, contributing to this population's nexus of risk are the findings associated with low rates of health service utilization among those infected with HSV-2. National estimates indicate a 74% utilization rate for women's health services.⁷⁸ The women in our study reported much lower rates despite being of reproductive age, as well as alarmingly overall low rates of preventative health care. Further, seropositive women were more likely to report seeking care for a non-emergency health issue at the emergency room.

Given these women's high rates of incarceration, it is important to note that previous research documents how criminal justice contact is associated with poor health service utilization due to disruptions in coverage including Medicaid⁷⁹ and overreliance on the emergency room as a primary source of care.⁸⁰ For disadvantaged Latinas with criminal

justice histories, these patterns may be worsened by several factors including limited economic resources, and limited sexual health care knowledge and education.

Limitations

Several important limitations should be considered in regard to the study's findings. First, it is a relatively small sample size that prevents us from conducting multivariate analyses. While the young adult Mexican-American women that are the focus of this study are an especially vulnerable group similar to women found in other disadvantaged Mexican-American communities, our small sample size may limit the representativeness of this group and findings should be applied with caution. Additionally, the sample of women all reside in Texas where health care policies and access are much different than other U.S. states. Because of changing policies and limits to sexual health services in this state, our findings may have limited generalizability. Moreover, there are limitations associated with the interpretations of items used in the Revised Conflict Tactics Scale measuring intimate partner violence. That is, the embedded cultural and gender dynamics in this population may have heightened the denial and minimization of these experiences.

CONCLUSIONS

HSV-2 in Mexican-American women is associated with detrimental psychological and behavioral risks. Latina women who have experienced intimate partner violence, mental illness, and or injection heroin use, should be screened for HSV-2. As HSV-2 is often not included in a standard STI screening,^{81–83} more resources and attention should be devoted to HSV-2 screening and treatment in clinical settings. Further, it is essential that sexual and reproductive health services be accessible and affordable for all women, especially in high-risk groups. For women without health service access and low utilization, correctional facilities, domestic violence organizations, and drug use treatment facilities may produce an immediate public health opportunity⁸⁴ for screening and treatment of HSV-2 and its comorbid behavioral and psychological risks. Long-term health equity efforts in behavioral medicine—including the integration of behavioral health and primary care and increasing access to preventative care—are essential for improving the health of Latinas living in disadvantaged neighborhoods.

Acknowledgments

The authors are grateful to Esmeralda Ramirez, Adriana Trevino, and Tina Cazares for their work on this project.

Funding: This study was funded by the National Institutes of Health, National Institute on Drug Abuse (R01DA039269). Additional support was provided to the lead author by the Lifespan/Brown Criminal Justice Research Training (CJRT) Program on Substance Use, HIV, and Comorbidities (R25DA037190). The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

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Demographic, Behavioral, Psychological, and Gender Correlates to HSV-2 Serostatus among Disadvantaged Latinas

Table 1

	HSV-2 Seropositive (n=63)		HSV-2 Seronegative (n=48)		t/x ²	p	d/OR (se)	p
	n	Percent/Mean(SD)	n	Percent/Mean(SD)				
Age		32.4 (1.74)		33.4 (2.47)	2.44	0.016	0.47 (0.18)	0.009
Years of School Completed		10.6 (1.86)		11.5 (2.00)	2.64	0.010	0.51 (0.21)	0.014
Marital Status					1.13	0.568		
Single	24	38.1	14	29.2			1.50 (0.61)	0.327
Separated/Divorced/Widowed	12	19.1	9	18.8			1.02 (0.50)	0.968
Married/Cohabiting	27	42.9	25	52.1			0.69 (0.27)	0.335
Number of Children		3.6 (1.61)		3.0 (1.50)	-1.99	0.049	-0.38 (0.19)	0.048
Unstably Housed	12	19.1	12	25.0	0.57	0.450	0.71 (0.33)	0.452
Employment					0.94	0.624		
Full-Time/Part-Time	32	50.8	22	45.8			1.22 (0.47)	0.605
Unemployed	20	31.8	14	29.2			1.13 (0.47)	0.770
Not in Labor Market	11	17.5	12	25.0			0.63 (0.30)	0.334
Past Year Drug Use								
Marijuana	26	41.3	16	33.3	0.73	0.393	1.41 (0.56)	0.394
Methamphetamines	13	20.6	5	10.4	2.09	0.148	2.23 (1.30)	0.155
Cocaine, Crack	10	15.9	11	22.9	0.88	0.348	0.63 (0.31)	0.350
Injection Heroin	7	11.1	2	4.2	1.76	0.184	2.88 (2.38)	0.201
Ever Incarcerated	41	65.1	27	57.5	0.66	0.415	1.38 (0.55)	0.416
Number of Incarceration Episodes 30+ Days					8.42	0.015		
0 episodes	35	55.6	39	81.3			0.29 (0.13)	0.006
1 episode	12	19.1	5	10.4			2.02 (1.16)	0.217
2 or more episodes	16	25.4	4	8.3			3.74 (2.24)	0.027
Total Number of Years Incarcerated		1.03 (2.26)		0.4 (1.60)	-1.61	0.110	-0.31 (0.17)	0.073
Maternal Attachment Scale		20.6 (9.59)		23.7 (9.41)	1.75	0.083	0.34 (0.19)	0.083
Traditional Attitudes Towards Women Scale		36.0 (8.76)		32.7 (9.22)	-1.93	0.056	-0.37 (0.18)	0.045
Sexual Relationship Power		29.9 (9.65)		30.4 (9.15)	0.28	0.783	0.06 (0.20)	0.770
No Sex Partners (Past Year)	4	6.3	3	6.4	0.00	0.983	-	

	HSV-2 Seropositive (n=63)			HSV-2 Seronegative (n=48)			t/x ²	p	d/OR (se)	p
	n	Percent/Mean(SD)	n	Percent/Mean(SD)	n	Percent/Mean(SD)				
Not in Current "Dating" Relationship	17	27.4	6	13.0	6	13.0	3.26	0.071	0.40 (0.21)	0.077
Number of Sex Partners (Past Year)		1.66 (1.92)		1.26 (0.77)		1.26 (0.77)	-1.34	0.184	-0.26 (0.15)	0.081
Never Used a Condom (Past Year)	36	63.2	30	69.8	30	69.8	0.50	0.490	0.74 (0.32)	0.490
Same Sex Sexual Encounter	24	38.7	12	26.1	12	26.1	1.89	0.169	1.79 (0.76)	0.171
Intimate Partner Violence Past Year Prevalence (CTS) ^a										
Negotiation	24	52.2	24	57.10	24	57.10	0.22	0.640	0.82 (0.35)	0.640
Psychological Aggression	35	76.1	28	66.7	28	66.7	0.96	0.328	1.59 (0.76)	0.329
Physical Assault	31	67.4	24	57.1	24	57.1	0.98	0.321	1.55 (0.69)	0.322
Sexual Coercion	29	63.0	18	42.9	18	42.9	3.60	0.058	2.28 (0.99)	0.060
Injury	27	58.7	24	57.1	24	57.1	0.02	0.883	1.07 (0.46)	0.883
Sexual Coercion Frequency ^b		6.04 (4.25)		7.00 (3.69)		7.00 (3.69)	0.78	0.440	-0.06 (0.22)	0.799
Sexual Coercion Severity							4.28	0.110		
None	17	37.0	24	57.1	24	57.1			0.44 (0.19)	0.060
Minor Only	6	13.0	2	4.8	2	4.8			2.42 (2.03)	0.293
Severe	23	50.0	16	38.1	16	38.1			1.63 (0.70)	0.263
Post-Traumatic Stress Disorder		38.7 (18.7)		34.5 (21.3)		34.5 (21.3)	-1.09	0.289	-0.21 (0.20)	0.302
Depression		10.6 (6.7)		7.5 (6.8)		7.5 (6.8)	-2.36	0.020	-0.45 (0.20)	0.023
Psychological Distress		58.3 (17.0)		50.7 (18.2)		50.7 (18.2)	-2.26	0.026	-0.43 (0.20)	0.030

^aIncludes only women who reported having a partner during the past year.

^bIncludes only those women who reported experiencing sexual coercion. t = t-statistic; x² = chi square statistic; d = Cohen's d statistic; OR = odds ratio

Table 2
Health Service Utilization Correlates to HSV-2 Serostatus among Disadvantaged Latinas (n = 125)

	HSV-2 Seropositive			HSV-2 Seronegative			p	OR (se)	p
	n	Percent	n	Percent	x ²				
Self-Reported Herpes	9	14.8	1	2.33	4.76	0.029	–		
Current Health Care Coverage					8.13	0.017			
No Coverage	36	58.1	26	56.5			1.07 (0.42)	0.873	
Public Coverage	21	33.4	8	17.4			2.43 (1.20)	0.060	
Private Coverage	5	8.1	12	26.1			0.25 (0.14)	0.015	
No/Inconsistent Health Care Coverage for the Past Year	40	65.6	23	51.1	2.25	0.134	1.82 (0.73)	0.136	
Received Routine Health Check-up in Past Year	29	46.8	29	63.0	2.81	0.094	0.52 (0.21)	0.095	
Received Well Women's Exam in Past Year	22	37.3	26	59.1	4.81	0.028	0.41 (0.17)	0.030	
Where Usually Seek Care for Non-Emergency					17.90	0.001			
Doctor's Office	15	25.9	24	54.6			0.29 (0.12)	0.004	
Free Clinic/Urgent Care/Planned Parenthood	14	24.1	15	34.1			0.62 (0.27)	0.272	
Emergency Room	25	43.1	5	11.4			5.91 (3.22)	0.001	
Would Not Seek Care	4	6.9	0	0.0			–		
Needed Medical Care but Did Not Seek it in Past Year	27	43.6	19	42.2	0.02	0.891	1.06 (0.42)	0.891	

x² = chi square statistic; OR = odds ratio