

# Sexual Risk Factors for HIV and Violence among Puerto Rican Women in New York City

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The authors examined sexual factors for HIV risk in 1,003 women of Puerto Rican heritage who attended a community-based New York City hospital clinic. Participants' ages ranged from 18 to 73 years. Half were born in the continental United States, and half were born in the Commonwealth of Puerto Rico. All were sexually active within the past 90 days with a male partner. The authors compared sociodemographic characteristics, experience of intimate partner violence (IPV), and HIV sexual risk factors (number of partners, history of sexually transmitted infections [STIs], condom use, and so on). Multiple regression analyses considering sociodemographic characteristics were a predictor for IPV and sexual risk behaviors. The authors found differences in sexual risk behaviors by place of birth (continental United States versus Commonwealth of Puerto Rico) and language chosen for the interview (Spanish or English). Puerto Rican women reported fewer sexual partners and STIs. Mainland-born and English-preference women reported more IPV, risky partners, and condom use. Birth in the continental United States and preference for English appear to be indicators of greater risk for IPV, risky sexual practices, and risky partners. HIV prevention intervention strategies for Puerto Rican women must address differences in heterosexual risk according to language and place of birth.

KEY WORDS: *HIV/AIDS; Hispanics; intimate partner violence; Latinas; sexual risk factors*

This study investigated intimate partner violence (IPV) and heterosexual risk factors for HIV/AIDS and other sexually transmitted infections (STIs) among a convenience sample of women of Puerto Rican heritage living in New York City (NYC). Investigators sought to determine whether those who were born in the continental United States or who preferred English over Spanish experience more IPV and greater HIV risks than their counterparts who were born in the Commonwealth of Puerto Rico or preferred to speak Spanish.

## **HETEROSEXUAL RISK AND PUERTO RICAN WOMEN**

HIV continues to be a threat to Latinas in the United States and is the fourth leading cause of death for Latinas between the ages of 35 to 44 years (Centers for Disease Control and Prevention [CDC], 2008). Those most affected by HIV/AIDS are Latinas in their most reproductive years (ages 25 to 44), who account for 70 percent of AIDS cases and represent 15 percent of all women living with HIV/AIDS. Heterosexual intercourse is the most common route of HIV transmission for Latinas (CDC, 2008).

Puerto Ricans are the second largest group of Hispanics in the United States (Oropesa, Landale, & Greif, 2008). Puerto Ricans make up only 9.6 percent of the Hispanic population in the United States but represent 58.0 percent of the AIDS cases among Latinos. Among Latino subgroups, men and women born in the Commonwealth of Puerto Rico have the highest incidence of HIV; the two most dominant transmission routes are heterosexual contact (38 percent) and injection drug use (39 percent) (CDC, 2009). Injection drug use has been found to be higher among Puerto Ricans than any other Latino subgroup (Kang, Deren, Andia, Colon, & Robles, 2001; Montoya, Bell, Richard, Carlson, & Trevino, 1999).

Among its many Hispanic ethnicities, NYC has one of the largest concentrations of Puerto Ricans in the continental United States (Oropesa et al., 2008). Although Hispanics represented 27 percent of the population in NYC, they accounted for 29 percent of newly diagnosed HIV cases in 2007 (New York City Department of Health and Mental Hygiene, 2009). Of Hispanic HIV cases, 26% were among Latinas (New York City Department of Health and Mental Hygiene, 2009). Frequent

cyclical migration patterns of people of Puerto Rican heritage between Puerto Rico and the continental United States have been well documented; frequent cyclical migration patterns are of concern because they can lead to higher incidence rates of HIV/AIDS in both communities (Ellis, Conway, & Bailey, 1996).

Previous research among Puerto Rican women has identified several categories of factors that may place them at increased risk for HIV: social norms, strict gender roles, power differentials, and cultural scripts such as *machismo* and *marianismo* (Moreno & El-Bassel, 2007; Ortiz-Torres, Serrano-Garcia, & Torres-Burgos, 2000; Raffaelli & Suarez Al-Adam, 1998); structural factors, including social marginalization and financial hardships (Moreno, 2007; Rivera, 1994); and beliefs systems, such as having misunderstandings about how HIV/AIDS and STIs are transmitted (Ortiz-Torres et al., 2000). There is also a limited knowledge regarding the health-specific needs of the diversity of Latinas (Amaro & de la Torre, 2002). Although *machismo* and *marianismo* are not unique to Latinos, they are present in some Latinos with different degrees of intensity. *Machismo* refers to men's being overpowering, dictating certain sexual behaviors such as having multiple sexual partners and being more informed about sex than women. *Marianismo* refers to being submissive and passive, dictating some sexual behaviors such as being ignorant about sex and STIs and letting a male partner decide about all sexual matters (Moreno, 2007).

#### **IPV AND PUERTO RICAN WOMEN**

In the United States, Latinos represent 15.8 percent of the population (U.S. Census Bureau, 2010) but account for 34 percent of the cases of IPV (Bureau of Justice Statistics, 2000). The National Family Survey found an even higher IPV rate among Hispanics (54 percent) compared with non-Hispanic whites (23 percent) (Strauss & Smith, 1990). However, other studies have found that when the effect of sociodemographic factors (such as income, age, and a family history of violence) are taken into consideration, these differences between Hispanics and non-Hispanic whites are not statistically significant (Aldarondo, Kaufman Kantor, & Jasinski, 2002). One longitudinal study suggests that Hispanics are nine times more likely to report male-to-female violence than any other type of abuse (Field & Caetano, 2005).

Only a few studies have been conducted on the difference in rates of IPV among Latino subgroups (Aldarondo et al., 2002; Kaufman Kantor & Asdigian, 1997; Kaufman Kantor, Jasinski, & Aldarondo, 1994). In the National Alcohol and Family Violence Survey (NAFVS), Kaufman Kantor et al. (1994) found that male-to-female abuse was higher among some Latino subgroups, with Puerto Ricans (20.4 percent) having the highest incidence of abuse, followed by Mexican Americans (17.9 percent) and Cuban Americans (2.5 percent). Acculturation factors have been implicated as a possible explanation for differences in IPV among the same ethnic groups (Caetano, Ramisetty-Mikler, Caetano, & Harris, 2007). In Aldarondo et al.'s (2002) analysis of the NAFVS data set, they found that Puerto Rican women reported the highest incidence of partner assaults, followed by Mexican Americans. A smaller incidence of reporting was found among immigrant groups, who might have had low reporting rates because of their immigration status.

Researchers have identified some factors that increase the susceptibility of Latinos to IPV: immigration (Aldarondo et al., 2002), acculturation (Caetano et al., 2007; Jasinski, 1998), socioeconomic deprivation and stressors (Kaufman Kantor et al., 1994), cultural gender factors such as *machismo* and *marianismo* (Moreno, 2007), and the presence of alcohol and substance use (Caetano et al., 2007; Neff, Holamon, & Davis Schluter, 1995).

#### **IPV AND HETEROSEXUAL RISK**

Some scholars have noted that living in an abusive situation makes it complicated for women to negotiate safe sex (Amaro, 1995; Campbell et al., 2008; Moreno, 2007; Suarez-Al-Adam, Raffaelli, & O'Leary, 2001). HIV and IPV share similar risk factors and are beginning to be recognized as intersecting problems (Amaro & Raj, 2000; Campbell et al., 2008; Watt et al., 2002). For instance, IPV has been identified as a risk factor for having unprotected sex (Amaro, 1995), a higher incidence of STIs, and having sex with a risky partner (El Bassel et al., 1998).

#### **PLACE OF BIRTH, LANGUAGE, HETEROSEXUAL RISK, AND IPV**

Acculturation is the process by which migrant groups adapt their behaviors as they interact with the mainstream culture (Rogler, Cortes, & Magaldy, 1991). Acculturation has been linked to both HIV

risk and IPV (Suarez-Al-Adam et al., 2000). Several studies have demonstrated that acculturation acts as a buffer in the adoption of HIV protective behaviors, specifically for traditional Latina women (Marin, Tschann, Gomez, & Kegeles, 1993; Rojas-Guyler, Ellis, & Sanders, 2005; Vargas Carmona, Romero, & Burns Loeb, 1999). For example, women with lower levels of acculturation have different specific HIV risk factors (for example, low condom use, less control over sexual relationships) than women with higher levels of acculturative factors (for example, higher number of sexual partners, riskier partners) (Flaskerud & Uman, 1996; Moreno & El-Bassel, 2007; Rojas-Guyler et al., 2005). However, Latinas who are born in the continental United States tend to perceive themselves more at-risk than their counterparts (Moreno & El-Bassel, 2007) and to use more condoms (Vargas Carmona et al., 1999).

Acculturation dynamics, such as changing gender roles and expectations and acculturative stress, have been associated with higher incidence of IPV among Latinas (Harris, Firestone, & Vega, 2005; Jasinski, 1998). Some studies have found that the more traditional the orientation (that is, strong familism and strict gender roles) among Latina women, the less likely they are to report IPV (Harris et al., 2005).

As a construct, acculturation is complex. Birth-place and language preference are two core components; socioeconomic status is another; yet no one or two components can reliably serve as a proxy for the construct. Therefore, it is difficult to assess how much its relationship with IPV and risky sexual behaviors can be attributed to components such as place of birth or language or to structural factors such as poverty. For example, low acculturation levels might reduce socioeconomic status and occupational choices, increase discrimination and stress, engender low educational attainment, and limit opportunities (Harris et al., 2005). Another possibility is that women born in the continental United States and those who prefer English may experience more acculturative stress or adopt less traditional behaviors and attitudes, either of which might contribute to more sexual risk factors.

Given that women of Puerto Rican heritage have been identified as having high risk for both HIV and IPV, it is important to examine in greater depth the nature of connections among risk factors. This descriptive study examined the relationship of place of birth and language and experience of IPV and heterosexual risk factors for HIV STIs, num-

ber of partners, partner's risk factors, and condom use) in a sample of 1,003 women of Puerto Rican heritage attending an outpatient clinic in NYC. On the basis of previous research studies that have found a relationship between HIV risk factors and acculturation, we hypothesized that Puerto Rican women born in the continental United States and those who preferred English would have more sexual risk factors than their counterparts. Given the associations between heterosexual risks for HIV and IPV, we further hypothesized that the experience of partner abuse—irrespective of place of birth, language, and socioeconomic characteristics—would be a risk factor for HIV.

## METHOD

### Sample Recruitment and Selection

Women in this study were being screened for eligibility to participate in Project Connect, a four-year randomized clinical trial of a relationship-based HIV prevention program. The parent study (Project Connect) examined the effectiveness of a theory-driven prevention intervention adapted to low-income Latina and African American women and their main sexual partners (El-Bassel et al., 2003; Schiff, Witte, & El-Bassel, 2003). The institutional review board from the parent study's institution and the medical setting approved all protocols for the present study. This article analyzes data collected during the screening interviews of the parent study.

The women were recruited from a large, urban hospital clinic in a low-income neighborhood in the Bronx, a borough of NYC. In four of the six areas served by this hospital, about 40 percent of the local residents live in poverty. About 48 percent are Latino, and 35 percent are African American. Neighborhood areas served by the hospital have one of NYC's highest rates of HIV/AIDS prevalence, two to three times higher than of other parts of the city (New York City Department of Health and Mental Hygiene, 2009).

Copies of a flier were posted in the outpatient clinics to encourage women to join the study. The flier described Project Connect as an intervention designed to help couples stay healthy and enhance their communication with each other. In addition to recruitment through fliers, two female Project Connect staff—one African American, one Puerto Rican—approached women who came to the clinic and recruited participants during the hours of 9:00 A.M. to 3:00 P.M. The Puerto Rican recruiter

was bilingual and primarily approached Spanish-speaking women.

Women who were interested completed a 15-minute face-to-face screening interview that took place in a private room at the clinic. This interview was available in either Spanish or English, and the women participating in the study were invited to choose the language to be used for the interview. As an incentive for completing the screening interview, participants were given a round-trip subway card, valued at \$3.00. An informed consent document, which was available in English and Spanish, was verbally explained to the women. After reviewing the document, each woman was asked to sign it and given a copy. Once the consent form was signed, the screening took place. A third of the women approached refused to be screened for the study. Women who were screened for the study reflected the population of patients served at the hospital in terms of age distribution, race/ethnicity, income, and employment status. Of those screened, 1,003 identified themselves as Puerto Rican and were included in this study.

## Measures

**Sociodemographic Variables.** Puerto Rican ethnicity was established by asking respondents who identified as being of Hispanic origin or descent which group best describes their national origin or ancestry. Only those who chose Puerto Rican were included in this study. To ascertain birthplace, respondents indicated whether they were born in the continental United States. For those born in the Commonwealth of Puerto Rico, we also asked the length of time living in the United States. Language preference refers to the respondent's choice of language for the screening interview (Spanish or English). Other sociodemographic indicators included age, relationship status, years of education, and employment (work for pay in the past month). Categorical variables with multiple categories (for example, education) were collapsed to dichotomous versions after it was ascertained that doing so did not alter the results.

**Partner Abuse.** Partner abuse was measured using the items from the Physical Assault and Sexual Coercion scales of the Revised Conflict Tactics Scale (Cronbach's  $\alpha$ s = .86 and .87, respectively) (Strauss, Hamby, Boney-McCoy, & Sugarman, 1996). The interview instrument included questions about the experience of partner abuse in reference to preva-

lence, severity, and frequency of partner abuse in the past six months and lifetime. This instrument has been previously used with Latinas in studies using nationally representative samples (Kaufman Kantor et al., 1994; Strauss & Smith, 1990).

**Sexual Risk Factors.** Sexual HIV risk factors were measured using selected items of the Sexual Risk Behavior Questionnaire (SRBQ). The SRBQ was developed by us and has been used in prior studies (El-Bassel et al., 1998; Gilbert, El-Bassel, Schilling, Wada, & Bennet, 2000) with over 2,000 women and men from similar health care settings, such as emergency departments and drug and STI clinics. The selected items included number of sexual partners in lifetime, number of sexual partners during the past year, and ever having an STI (such as gonorrhea, syphilis, chlamydia, or herpes). Because of nonnormal distributions, the numeric variables were dichotomized at the median integer.

Women with a main male sexual partner were asked whether or not he had any of the following factors in the past 90 days that might place the woman at risk for HIV infection: had sex with men or other women, contracted or exhibited symptoms of an STI (for example, pain during urination, sores on the penis), injected drugs, and had a positive HIV diagnosis. Interviewers showed a card listing all four risk factors; participants who responded in the affirmative were not queried as to which specific risk factor their partner exhibited. In addition, participants who answered in the negative were asked whether or not they worried that their partner might have had any of those risk factors.

Additional items for those who had intercourse with a main partner in the past 90 days were condom use (yes/no) and frequency of condom use (0 = never, 4 = every time) for those who had used one. A three-month (90-day) time period was used on the basis of conceptual and theoretical arguments indicating that it provides one the most favorable balance of reliability and validity (Jaccard, McDonald, Wan, Dittus, & Quinlan, 2002).

## Statistical Analyses

These analyses included only women who identified as ethnically Puerto Rican. We used descriptive statistics (*t* test and chi-square) to compare the sociodemographic characteristics, women's experience of abuse by their main partner, and sexual risk factors of women born on the mainland United States and in the Commonwealth of Puerto Rico and of

women who preferred Spanish or English for the screening questionnaire.

We used multiple logistic regressions to measure associations of sociodemographic characteristics and partner abuse with sexual risk factors. For each outcome, the model initially included as predictors birthplace and language; other sociodemographic characteristics—age, education, employment—and either relationship status (when the outcome pertained to the entire sample) or experience of IPV by a participant's main partner (when the outcome pertained only to participants with a main partner); and interaction terms for birthplace and language crossed with each of the other predictors. The final model for each outcome dropped nonsignificant interactions but retained birthplace and language and each of the other sociodemographic predictors so as to control for possible confounding, because each was associated with birthplace or language or (in most cases) both. The analyses were performed using SAS (version 8.02).

## RESULTS

### Place of Birth, Language, Sociodemographic Characteristics, and IPV

The sample of 1,003 was 50 percent born in the continental United States and 50 percent born in the Commonwealth of Puerto Rico; 39 percent preferred a Spanish interview, whereas 61 percent preferred English. Sociodemographic characteristics of these women and reported frequency of experiencing IPV, according to birthplace and language preference, are displayed in Table 1.

Commonwealth-born women (versus continental U.S.-born women), especially those who preferred Spanish (versus English), were older than their counterparts and less likely to have completed high school or be employed. Women interviewed in English were more likely to have a main male sexual partner than those interviewed in Spanish. More women who preferred English had been abused by their main partner, but differences by birthplace were not significant.

### Birth Place, Language, and Sexual Risk Factors

The frequencies of reported sexual risk factors for Puerto Rican women according to birthplace and language preference are displayed in Table 2. Significant differences were found in most of these variables.

More of the women who preferred English and more of those born in the continental United States reported having five or more lifetime sexual partners, two or more sexual partners in the past year, and a history of STIs. Also, more women who preferred English and were born on the U.S. mainland used condoms with their main partner; however, among those who used condoms at all, more Spanish speakers used them every time they had sex. With regard to partner risk factors, more women who preferred English and more born in the continental United States knew or worried that their main sexual partner had risk factors for HIV. Differences by birthplace were not significant with regard to women's knowing that their partner had risk factors for HIV, although slightly more Commonwealth-born women worried that their partner had such risk factors.

### Multivariate Logistic Regression

The results of logistic regressions of the associations among the two measures of place of birth and language, sociodemographic characteristics, and IPV and each of the six main sexual risk factors are displayed in Tables 3 and 4.

Multivariate analyses revealed an interaction between birthplace and age as predictors of multiple partners in the past year and having had an STI. Regarding women with more than one partner as compared with women with one or fewer partners, among those born on the U.S. mainland, there was no significant age difference, but among those born in the Commonwealth of Puerto Rico (who were, on average, older), women with more than one partner were younger than women with one or fewer partners. Regarding women who had an STI as compared with women who had never had an STI, among those born in the continental United States, women who had had an STI were older, but among those born in Puerto Rico, women who had had an STI were comparable in age to those who had not.

Among women with a main partner, multivariate analyses revealed that those who preferred English and those who had experienced IPV were more likely to report condom use with the main partner in the past 90 days and to have knowledge of or worry about partner risk factors. There was also an interaction between education level and acculturation as predictors of condom use. Among women with less than a high school education, those born

**Table 1: Sociodemographic Characteristics of Participants and Reported Frequencies of Experiencing Intimate Partner Violence, by Language Preference and Birthplace (N = 1,003)**

Characteristic	Spanish Preferred <sup>a</sup>		English Preferred <sup>b</sup>		Total <sup>c</sup>		F(1, N)	p	Effect of Birthplace <sup>e</sup>	t(df)	p
	M	SD	M	SD	M	SD					
<b>Age (years): 18–73</b>											
P.R. born <sup>d</sup>	45.96	0.57	38.77	0.80	43.58	12.23					
U.S. born <sup>e</sup>	35.26	1.42	32.78	0.49	33.04	8.75					
Total <sup>c</sup>	44.51	12.74	34.41	9.38	38.32	11.87	13.5 (652)	<.0001	15.7 (910)	<.0001	
<b>Years in United States: 0–64</b>											
P.R. born <sup>d</sup>	25.04	15.26	28.84	13.03	26.30	14.66	-2.9 (374)	.004			
<b>High school education<sup>f</sup></b>											
P.R. born <sup>d</sup>	37	107	43	57	39	164					
U.S. born <sup>e</sup>	55	24	54	220	54	244					
Total <sup>c</sup>	39	131	52	277	47	408	13.4 <sup>g</sup>	.0002	21.8 <sup>g</sup>	<.0001	
<b>Employe<sup>d</sup></b>											
P.R. born <sup>d</sup>	7	23	13	21	9	44					
U.S. born <sup>e</sup>	13	7	28	123	26	130					
Total <sup>c</sup>	8	30	23	144	17	174	40.9 <sup>h</sup>	<.0001	51.9 <sup>h</sup>	<.0001	
<b>Main male sexual partner</b>											
P.R. born <sup>d</sup>	47	158	65	108	53	266					
U.S. born <sup>e</sup>	45	24	76	339	73	363					
Total <sup>c</sup>	47	182	73	447	63	629	68.2 <sup>i</sup>	<.0001	41.2 <sup>i</sup>	<.0001	
<b>History of IPV: Ever</b>											
P.R. born <sup>k</sup>	8	13	29	31	16	44					
U.S. born <sup>l</sup>	21	5	19	66	20	71					
Total <sup>m</sup>	10	18	22	97	18	115	12.2 <sup>n</sup>	.0005	1.0 <sup>n</sup>	0.32	

Note: P.R. born = born in the Commonwealth of Puerto Rico; U.S. born = born in the continental United States. P<sub>1</sub> = intimate partner violence.  
<sup>a</sup>n = 389. <sup>b</sup>n = 614. <sup>c</sup>n = 1,003. <sup>d</sup>n = 503. <sup>e</sup>n = 500. <sup>f</sup>n = 874. <sup>g</sup>N = 874. <sup>h</sup>N = 1,002. <sup>i</sup>n = 183. <sup>j</sup>n = 447. <sup>k</sup>n = 267. <sup>l</sup>n = 263. <sup>m</sup>n = 620. <sup>n</sup>N = 630.

on the U.S. mainland and those who preferred English were more likely than their counterparts to use a condom. Among women with a high school degree or more, however, there was no difference in condom use by birthplace, and women who preferred English were far more likely to use a condom.

## DISCUSSION

Acculturation as a construct—and the proxy variables used to measure it—has been controversial in

the literature because of its complexity and imperfection (Hunt, Schneider, & Comer, 2004; Lara, Gamboa, Kahnramanian, Morales, & Hayes-Bautista, 2005). In this study, we strove to understand the differences among groups of women of Puerto Rican heritage (born in the continental United States or in the Commonwealth of Puerto Rico), assuming that Puerto Ricans born on the U.S. mainland tend to be different and might suffer more from acculturative stress or adopt a less traditional perspective with regard to behaviors and attitudes. This might

**Table 2: Frequencies of Reported Sexual Risk Factors, by Language Preference and Birthplace (N = 1,003)**

Characteristic	Spanish Preferred <sup>a</sup>		English Preferred <sup>b</sup>		Total <sup>c</sup>		Effect of Language		Effect of Birthplace	
	%	n	%	n	%	n	$\chi^2(1)$	p	$\chi^2(1)$	p
<b>Partners in lifetime: &gt;4</b>										
P.R. born <sup>d</sup>	18	58	44	68	26	126				
U.S. born <sup>e</sup>	33	17	59	255	56	272				
Total <sup>f</sup>	20	75	55	323	41	398	117.5 <sup>g</sup>	<.0001	89.5 <sup>h</sup>	<.0001
<b>Partners in past year: &gt;1</b>										
P.R. born <sup>d</sup>	8	25	24	40	13	65				
U.S. born <sup>e</sup>	11	6	29	130	27	136				
Total <sup>f</sup>	8	31	28	170	20	201	57.5 <sup>g</sup>	<.0001	31.7 <sup>h</sup>	<.0001
<b>History of STI: Ever</b>										
P.R. born <sup>d</sup>	9	31	32	54	17	85				
U.S. born <sup>e</sup>	15	8	31	140	30	148				
Total <sup>f</sup>	10	39	32	194	23	233	61.8 <sup>g</sup>	<.0001	22.5 <sup>h</sup>	<.0001

Women with a Main Partner	Spanish Preferred <sup>a</sup>		English Preferred <sup>b</sup>		Total <sup>c</sup>		Effect of Language		Effect of Birthplace	
	%	n	%	n	%	n	$\chi^2(1)$	p	$\chi^2(1)$	p
<b>Used condom with main partner of past 90 days: At all<sup>k</sup></b>										
P.R. born <sup>l</sup>	9	11	25	23	16	34				
U.S. born <sup>e</sup>	17	4	26	75	25	79				
Total <sup>m</sup>	10	15	25	98	21	113	15.2 <sup>n</sup>	<.0001	6.8 <sup>o</sup>	.01

Women with a Main Partner Who Used a Condom	Spanish Preferred <sup>a</sup>		English Preferred <sup>b</sup>		Total <sup>c</sup>		Effect of Language		Effect of Birthplace <sup>d</sup>	
	%	n	%	n	%	n	$\chi^2(1)$	p	$\chi^2(1)$	p
<b>Used condom with main partner of past 90 days: Every time<sup>e</sup></b>										
P.R. born <sup>f</sup>	64	7	39	9	47	16				
U.S. born <sup>g</sup>	75	3	27	20	29	23				
Total <sup>h</sup>	67	10	30	29	36	41	7.7 <sup>i</sup>	.005	3.2 <sup>j</sup>	0.07

Women with a Main Partner	Spanish Preferred <sup>a</sup>		English Preferred <sup>b</sup>		Total <sup>c</sup>		Effect of Language		Effect of Birthplace	
	%	n	%	n	%	n	$\chi^2(1)$	p	$\chi^2(1)$	p
<b>Know partner has risk factor</b>										
P.R. born <sup>x</sup>	8	10	27	25	16	31				
U.S. born <sup>y</sup>	13	3	14	42	14	45				
Total <sup>m</sup>	9	13	17	67	15	80	6.4 <sup>n</sup>	.01	0.3 <sup>o</sup>	0.56

Women with a Main Partner	Spanish Preferred <sup>a</sup>		English Preferred <sup>b</sup>		Total <sup>c</sup>		Effect of Language		Effect of Birthplace	
	%	n	%	n	%	n	$\chi^2(1)$	p	$\chi^2(1)$	p
<b>Worry partner has risk factor</b>										
P.R. born <sup>cc</sup>	12	14	31	21	19	35				
U.S. born <sup>dd</sup>	10	2	20	74	28	76				
Total <sup>bb</sup>	12	16	30	95	24	111	17.1 <sup>ee</sup>	.0001	4.5 <sup>ee</sup>	0.03

Note: P.R. born = born in the Commonwealth of Puerto Rico; U.S. born = born in the continental United States; STI = sexually transmitted infection; IPV = intimate partner violence.  
<sup>a</sup>n = 389. <sup>b</sup>n = 614. <sup>c</sup>n = 1,003. <sup>d</sup>n = 503. <sup>e</sup>n = 500. <sup>f</sup>N = 967. <sup>g</sup>N = 1,002. <sup>h</sup>n = 183. <sup>i</sup>n = 447. <sup>j</sup>n = 620. <sup>k</sup>Of the 534 who had sex, <sup>l</sup>n = 218. <sup>m</sup>n = 534. <sup>n</sup>N = 534. <sup>o</sup>n = 15. <sup>p</sup>n = 97. <sup>q</sup>n = 112. <sup>r</sup>Of the 113 who used a condom at all in past 90 days, <sup>s</sup>n = 34. <sup>t</sup>n = 500. <sup>u</sup>N = 112. <sup>v</sup>n = 149. <sup>w</sup>n = 385. <sup>x</sup>n = 218. <sup>y</sup>n = 316. <sup>z</sup>n = 137. <sup>aa</sup>n = 319. <sup>ab</sup>n = 456. <sup>ac</sup>n = 183. <sup>ad</sup>n = 273. <sup>ae</sup>N = 456.



**Table 3: Logistic Regression: Birthplace, Language, and Other Sociodemographics Characteristics as Predictors of Sexual Risk Factor for Entire Sample (N = 1,003)**

Characteristic	Partners in Lifetime: >4		Partners in Past Year: >1		History of STI	
	Para. Est.	p	Para. Est.	p	Para. Est.	p
Age	ns		-.03	.0006		ns
High school education	ns			ns		ns
Employed	ns			ns	.31	.01
Relationship status <sup>a</sup>	ns			ns		ns
Birthplace: U.S.	-.29	.002	0.89	.01	.66	.05
Birthplace × Age	—		-.03	.005	-.02	.02
Prefer English	-.57	<.0001	-.58	<.0001	-.67	<.0001

	Partners in Lifetime: >4		Partners in Past Year: >1		History of STI	
	OR	CI	OR	CI	OR	CI
Birthplace: U.S.	0.56	0.39–0.81				
Age: U.S. born			1.00	0.97–1.02	1.02	1.00–1.05
Age: P.R. born			0.94	0.91–0.96	0.98	0.96–1.01
Prefer English	0.32	0.22–0.48	0.31	0.19–0.53	0.26	0.16–0.43

Notes: Para. Est. = parameter estimate, p = p of Wald  $\chi^2$ ; OR = odds ratio; CI = confidence interval. A dash in a cell indicates an interaction that was not significant in the initial full model and was dropped from the final model.

<sup>a</sup>Has main partner.

contribute to greater sexual risk and influence the experience of IPV as well.

For virtually all IPV and sexual risk factors, women who were born in the Commonwealth of Puerto Rico and those who preferred Spanish for their interview (that is, those who were less acculturated) had lower risk than their counterparts who were born in the continental United States or preferred English. It is possible that the lower rates of IPV reported by women preferring Spanish can be attributed to social factors such as stigma of abuse or norms concerning privacy (Harris et al., 2005). Also, Commonwealth-born women were significantly older than others in the sample (revealed in multivariate results as an interaction between birthplace and age). A limitation of this study is our inability to segregate effects of age from effects of being born in the Commonwealth of Puerto Rico or preferring Spanish. A weakness of explanations based on acculturation is that acculturation alone does not take into consideration the complex and differential social and political contexts in which immigrant groups live (Arcia, Skinner, Bailey, & Correa, 2001) and the different levels of women's empowerment, regardless of language, place of birth, and length of time in the United States. Limitations of the data

also prevented us from assessing other dimensions of acculturation such as stress, adaptation, and attitudes. These issues pose formidable challenges for researchers, and more studies are needed that probe their complexities.

Our results show that birth in the continental United States and English language preference appear to be harbingers of greater risk for IPV, risky sexual practices, and risky partners. Although the greater sexual risk may be somewhat controlled by condom use, only inconsistent condom use was reported by the women who preferred English. The finding that among women who used condoms at all with their main partner, Spanish-speaking women were more likely to use condoms consistently contradicts most previous research. However, because of the small number of participants in this particular analysis, generalization is not warranted unless the finding is replicated.

The present study has several weaknesses regarding sampling strategy. The sample was a convenience sample and lacked randomization. There were also many opportunities for selection bias. Participants were recruited primarily during the day time, probably targeting more women who do not work during the day and might have significantly different



**Table 4: Logistic Regression: Acculturation, Other Sociodemographic Characteristics, and Partner Abuse as Predictors of Sexual Risk Factors for Women with a Main Partner (N = 620)**

Characteristic	Used Condom with Main Partner: Past 90 Days		Knows Partner Has a Risk Factor		Worries Partner Has a Risk Factor	
	Para. Est.	p	Para. Est.	p	Para. Est.	p
Age		ns		ns		
High school education		ns	.31	.03	.29	.02
Employed		ns		ns	.44	.01
Birthplace: U.S.		ns		ns		ns
Birthplace × Education	-.39	.01	—		—	
Prefer English	-.66	.002	-.75	.0005	-.64	.001
Language × Education	.56	.01	—		—	
IPV	.33	.05	-.33	.03	-.52	.0005

	Used Condom with Main Partner: Past 90 Days		Knows Partner Has a Risk Factor		Worries Partner Has a Risk Factor	
	OR	CI	OR	CI	OR	CI
Birthplace: U.S.				ns		ns
Birthplace: Less than high school education	0.37	0.14–0.94	—		—	
Birthplace: High school graduate	1.87	0.86–4.06	—		—	
Prefer English			0.23	0.10–0.52	0.28	0.13–0.60
Birthplace: Less than high school education	0.81	0.29–2.29	—		—	
Birthplace: Less than high school education	0.09	0.02–0.32	—		—	

Notes: Para. Est. = parameter estimate; p = p of Wald  $\chi^2$ ; OR = odds ratio; CI = confidence interval. A dash in a cell indicates an interaction that was not significant in the initial full model and was dropped from the final model.

sociodemographic profiles in areas such as education levels and acculturation than do women who do work during the day. It is also possible that less acculturated women tend to attend health clinics such as the one where recruitment was conducted for this study. As mentioned earlier, the sample's sociodemographic characteristics reflected those of the clinic, which has a high poverty rate, a large Latino population, and the highest HIV incidence in the country. In addition, the sample had a high refusal rate, which was probably a result of the sensitive content of the study.

#### IMPLICATIONS FOR INTERVENTION

Acculturation remains a paradox for Latinas in that healthy protective behaviors decline with acculturation (Abraido-Lanza, Flórez, & Flórez, 2005). Our findings suggest that this paradox is particularly complex for Puerto Rican women in relation to sexual risk behaviors and IPV. Moreover, the conceptualization of acculturation as a construct used in research requires further refinement. For both

reasons, further studies are needed to shed light on this topic.

Behavioral interventions remain the only way to control the spread of HIV (Crepaz et al., 2006), and it is important to have effective interventions to eliminate racial and ethnic disparities (Amaro & de la Torre, 2002). Findings from the present study highlight the need for specific prevention messages that take into consideration differences among Puerto Rican women that are based on place of birth and language preference. Community-based programs, service providers, and researchers often struggle with the challenge of how to tailor specific prevention messages and interventions to specific ethnic groups and subgroups. Findings from the present study can be used to tailor intervention messages because they reveal different risk factors. For example, given that Spanish-speaking Puerto Rican women in this study did not perceive themselves to be at risk for HIV, prevention strategies for them might focus on promoting awareness of risk and accuracy of risk assessment.

Partner abuse increases women's vulnerability to HIV because women often have difficulties negotiating safer sex and getting access to health services, preventive programs, and treatment care (González-Guarda, Peragallo, Urrutia, Vasquez, & Mitrani, 2008; Moreno, 2007). Our findings reveal that exposure to IPV creates unique HIV risk factors for Puerto Rican women who speak English. It is imperative to integrate these considerations into prevention messages and programs for Puerto Rican women who live in abusive situations. **HSW**

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