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HIV risk behaviors of Latin American and Caribbean men who have sex with men in Miami, Florida, USA

Mete Akin,[1] M. Isabel Fernández,[1] G. Stephen Bowen,[1] and Jacob C. Warren[1]

ABSTRACT

Objective.   *The goal of this study is to describe the sexual practices, drug use behaviors, psychosocial factors, and predictors of unprotected anal intercourse (UAI) in a sample of Hispanic men who have sex with men (MSM) born in Latin American and Caribbean (LAC) countries who currently reside in Miami-Dade County, Florida.*

Methods.   *Hispanic MSM (N = 566) recruited from community and Internet venues completed a computer-assisted self-interview assessing sociodemographic factors, drug use, sexual behaviors, and psychosocial factors. We focused on the 470 men who were born in LAC countries, including Puerto Rico. We first examined separately, by country of origin, the sexual practices, drug use behaviors, and psychosocial factors of the sample. We then collapsed the groups and examined the factors associated with UAI in the previous 6 months for the entire sample of Hispanic MSM from LAC countries.*

Results.   *In the previous 6 months, 44% of the sample engaged in UAI, and 41% used club drugs. At the multivariate level, psychological distress, higher number of sexual partners, club drug use, HIV-positive status at the time of immigration, and greater orientation to American culture were significantly associated with UAI in the previous 6 months.*

Conclusion.   *Many MSM born in LAC countries engage in HIV-related risk behaviors in the AIDS epicenter of Miami-Dade County, Florida. Culturally appropriate interventions should address these risk behaviors in this underserved population.*

Key words   Epidemiology, HIV infections, risk taking, sexual behavior, Latin America and the Caribbean, United States of America.

While the impact of HIV/AIDS in areas such as Sub-Saharan Africa has long been recognized, there is increasing awareness of the emerging epidemic in many Latin American and Caribbean (LAC) countries (1). The 2006 Joint United Nations Programme on HIV/AIDS (UNAIDS) global HIV/AIDS report indicates that, among LAC countries, the incidence of new HIV infections in 2005 was estimated at 140 000, and the total HIV prevalence was 1.8 million in Latin America and 440 000 in the Caribbean (2). The LAC countries with the highest seroprevalence rates are located in the Caribbean. Haiti has the highest estimated adult HIV seroprevalence rate in the Americas (3). Among the LAC countries in South, Central, and North America, nearly half of the HIV/AIDS cases are from Brazil, Colombia, Argentina, and

[1] Nova Southeastern University, College of Osteopathic Medicine, Fort Lauderdale 33328-2018, Florida, United States of America. Send correspondence and reprint requests to: Mete Akin, Nova Southeastern University, College of Osteopathic Medicine, 4th Floor Terry Building, 3200 South University Drive, Fort Lauderdale 33328-2018, FL, United States of America; telephone: 786-246-1758; fax: 954-262-3714; e-mail: akin@nova.edu.

Mexico (1). The estimated number of individuals living with HIV/AIDS in LAC countries is 2 million, which exceeds the number in the United States, Western Europe, Canada, Japan, and Australia combined (1).

A major route of HIV transmission in LAC countries is male-to-male sexual contact (4). Most cases in Paraguay, Chile, Peru, Ecuador, Colombia, Mexico, and Cuba are among men who have sex with men (MSM) (2). Increasingly, new cases of HIV in Argentina, Bolivia, and Brazil are attributable to male-to-male sexual contact (5). In the Central American countries of El Salvador, Nicaragua, and Panama, male-to-male sexual contact is considered to be the primary driving force for new HIV infections, even though the proportion of cumulative cases attributable to male-to-male sexual contact is only 13.5% (6).

Estimated seroprevalence rates among MSM in different LAC countries are highly variable, ranging from 2% to 28% (7). Seroprevalance rates typically are estimated to be higher in urban areas than in rural areas (8). The proportion of HIV/AIDS cases attributable to male-to-male sexual contact in major urban areas of LAC countries ranges from 12% in Santo Domingo, Dominican Republic, to 30% in Sao Paolo, Brazil (2). A seroepidemiologic cross-sectional study of 13 847 men in seven South American countries from 1999 to 2002 found high seroprevalence rates among MSM. The rates were as follows: Peru (11.0%, 1999 to 2000), Paraguay (13.0%, 2002), Argentina (14.5%, 2000 to 2002), Ecuador (16.6%), Uruguay (16.9%), Colombia (19.7%, 2002), and Bolivia (20.6%) (8).

It is clear that MSM account for a significant number of HIV/AIDS cases in the LAC region. In the United States, where the number of Hispanics is rapidly increasing, fueled in part by immigration from LAC countries (9), Hispanic MSM are heavily affected by the HIV epidemic. This is particularly true in metropolitan areas such as Miami-Dade County, Florida, where Hispanics account for 51.6% of the cumulative number of AIDS cases and 56% of new HIV cases reported in 2004 among

MSM (10). Among Hispanic males, 68% of cumulative AIDS cases and 61% of new HIV cases with known transmission category are MSM and the proportion is increasing (11). An estimated 17% of adult Hispanic MSM in Miami-Dade County have HIV infection (12).

Approximately 57% of Miami-Dade residents are born outside the United States, and 87% of these persons are from LAC countries (13, 14). Previous studies of Hispanic MSM in Miami by Fernández et al. (15) found that 83% of study participants were born in LAC, and 47% of these men have lived in the United States for less than 5 years. The high proportion of immigrant MSM from LAC countries, many of whom have been in the United States for less than 5 years, has important implications for HIV transmission and acquisition within the United States among Hispanic MSM. Hispanic MSM residents of South Florida may also travel to their home countries for business or social reasons and engage in risky behaviors while there.

Several studies have examined HIV risk practices among Hispanic MSM in the United States (16–18). However, few have focused exclusively on Hispanic MSM immigrants from LAC countries. Understanding the sexual and drug use behaviors of immigrants from LAC countries currently living in AIDS epicenters such as Miami is important for developing tailored risk reduction interventions. In this paper, we report on a large sample ($N = 470$) of Hispanic MSM who immigrated from LAC countries to Miami-Dade County, Florida. The goal of the paper was to: (1) describe separately by country of origin the sexual practices, drug use behaviors, and psychosocial factors of the sample; and (2) examine the factors associated with unprotected anal intercourse (UAI) in the previous 6 months across the entire sample.

MATERIALS AND METHODS

Participants

From October 2003 to February 2005, we enrolled 566 Hispanic MSM

in a study comparing the efficiency and cost of recruitment at "Internet" versus "community" venues (19). The eligibility criteria were as follows: (1) self-identified as Hispanic/Latino, (2) had sex with a man in the last 5 years, (3) 18 years of age or older, (4) resident of South Florida, (5) directly approached by staff, and (6) visited our field offices for screening and enrollment. Approximately 97% of men who visited the offices were eligible; 100% of eligible men enrolled. In this paper, we report on the 470 men who had immigrated from LAC countries.

Design

We used a quasi-experimental design in which recruitment approaches were implemented sequentially in cycles, alternating between Internet and community recruitment (20). The protocol was approved in July 2003 by the Institutional Review Board at the University of Miami (data collection phase) and in January 2005 at Nova Southeastern University (data analysis phase).

Sampling and recruitment

We used time and space sampling (17, 21, 22) for community recruitment and our previously published adaptation of these procedures for Internet recruitment (16, 20, 23). We developed separate lists of Internet venues (non-fee-based regional chat rooms that did not specifically focus on sex or dating) and community venues (e.g., beaches, parks, gyms, clubs) catering to Hispanic MSM and randomly selected venues from each list.

We conducted observational studies to determine periods of peak and off-peak activity at each venue. We then drafted a list of "recruitment periods" (systematically selected days and 3-hour time blocks corresponding to peak activity) and randomly selected venues and recruitment periods to develop a calendar of "sampling events" (days and time blocks slated for collection). We used area-based sampling.

We defined a specific area at each venue and approached every nth man who entered the area, modifying the interval to correspond to the level of activity at each venue.

We used a five-step script to determine whether each potential participant approached met the age, ethnicity, and residency requirements (16, 20, 23). To enhance our credibility for Internet recruits, we invited potential participants to visit the project website during the chat. If they met preliminary eligibility requirements, staff described the study and invited the potential participant to visit one of our two field offices for screening and enrollment. Men recruited at community venues were given referral cards; those recruited via the Internet were told to remember the screen name used during the chat. For each man approached or chatter engaged, the staff logged whether he was: (1) eligible, (2) interested, or (3) referred to field offices.

Assessment procedures

When potential participants presented themselves at the field offices, staff confirmed referral by asking community recruits to present their referral card and Internet recruits to provide the screen name used during the chat. Once referral was confirmed, men were screened for eligibility; if eligible, they were invited to participate after a full explanation of the study procedures. To minimize duplication, as part of the eligibility screen we asked men if they had previously participated in the study and cross-referenced their birthdays and zip codes with the list of study participants before enrollment. After giving informed consent, participants completed an audiocomputer-assisted self-interview, which lasted 60 to 90 minutes; they were given $50 as compensation.

Measures

Demographics. Participants reported their age, country of origin, primary reason for migration, education level, monthly income, and employment status. Participants also reported the number of years they had lived in the United States and their age at immigration.

HIV serostatus. Participants stated whether they had been tested for HIV. Those who had been tested reported the result and the date of their last HIV test.

Sexual behavior in the last 6 months. Participants reported the number of male sex partners; number of sex partners they knew were HIV positive; and whether they engaged in UAI, unprotected receptive anal intercourse (URAI), or unprotected insertive anal intercourse (UIAI) as well as the number of men with whom they engaged in URAI and UIAI in the previous 6 months.

Recreational drug use in the last 6 months. Participants reported whether they had used each of the following recreational drugs in the previous 6 months: cocaine, crystal methamphetamine, ecstasy, marijuana, and club drugs in general. We operationally defined club drugs to include cocaine, crystal methamphetamine, ecstasy, Viagra, ketamine, and γ-hydroxybutyrate based on our previous work (16, 20, 23).

Psychosocial factors. We measured psychological distress, loneliness, and history of suicide attempts using instruments developed by Diaz et al. (24). We used this instrument because it was specifically constructed and validated for use with Hispanic MSM from three cities, including Miami.

Psychological distress. We used a 10-item questionnaire developed by Diaz et al. (24) consisting of a seven-point scale ranging from daily to never. Participants rated how frequently they had experienced things such as "feeling everything is an effort" (α = 0.90).

Loneliness. We used four items to assess loneliness (e.g., "how often do you feel you lack companionship?"). The four response categories ranged from "never" to "always" (α = 0.88).

History of suicide attempts. Participants reported whether they had ever attempted to take their own life.

Cultural orientation. We measured cultural orientation with the "Americanism" and "Hispanicism" subscales from The Behavioral Acculturation Scale (25). This instrument assesses identification with mainstream English-speaking American (21 items scored on a five-point Likert scale, α = 0.93) and Hispanic (21 items scored on a five-point Likert scale, α = 0.93) societies separately as well as level of bicultural identification. Developed and validated in Miami, it has good reliability with Hispanics from diverse subgroups. For this and subsequent measures, we calculated Cronbach alpha coefficients using study data.

Analysis plan. We first categorized the sample by country of origin and determined which countries had a minimum number of participants (n = 25) where analysis would be meaningful. These countries were Argentina (n = 34), Colombia (n = 101), Cuba (n = 122), Puerto Rico (n = 31), and Venezuela (n = 60). We grouped countries with fewer than 25 participants into an "all other LAC countries" category (n = 122). This group included men born in Peru (n = 21), Nicaragua (n = 20), Ecuador (n = 16), Chile (n = 12), and Brazil (n = 8), with smaller representation from various other LAC countries.

We then compared the demographic characteristics, drug use, sexual behaviors, and psychosocial factors across the six groups at the univariate level, using one-way analysis of variance and Kruskal–Wallis tests for continuous variables and χ^2 tests for categorical variables. The P values generated from the univariate tests described above compare a given test variable across each of the six groups but do not compare differences between individual groups. We used Kruskal–Wallis methods to examine the number of sexual partners with whom participants had engaged in UAI, URAI, and UIAI because these variables were not normally distributed.

To determine predictors of UAI in the previous 6 months, we categorized the sample into those who reported having UAI in the previous 6 months ($n = 202$) and those who did not ($n = 253$). Fifteen participants were not included in this analysis because they did not report whether they had engaged in UAI in the previous 6 months.

We conducted univariate analysis to determine which factors to include in a logistic regression. Following the recommendations of Hosmer and Lemeshow (26), we included factors with P values of 0.20 or lower because use of more traditional significance levels (e.g., 0.05) might fail to identify important relationships. The variables with P values $\leq$ 0.20 were employment status, HIV status, HIV status at immigration, use of any club drug in the last 6 months, number of sexual partners

in the previous 6 months, loneliness, psychological distress, history of suicide attempt, and level of Americanism. Because of collinearity between HIV status and HIV status at immigration, only status at immigration was included in the logistic regression. We selected HIV status at immigration because of its stronger univariate association with unprotected sex. To control for potential age effects, we included age as a control variable.

RESULTS

Demographic characteristics of sample by country of origin

The demographic characteristics of the sample by country of origin are presented in Table 1. Men born in

Cuba were significantly older (mean age 34.84 years; $P < 0.001$) and had lived in the United States longer than the rest of the sample (mean 12.67 years; $P < 0.001$); their average age at immigration was 22. Compared with the rest of the sample, men born in Venezuela had the highest proportion of HIV-positive men (34.5%), while men born in Colombia had the lowest proportion of HIV-positive men (10.3%). At least half of the HIV-positive men who immigrated from Venezuela, Colombia, and Argentina were positive at the time they entered the United States. In contrast, none of the HIV-positive men born in Puerto Rico or Cuba was infected at the time of immigration. Only two of the 15 HIV-positive men from all other LAC countries reported they were HIV positive at immigration.

TABLE 1. Demographic characteristics of the sample of Hispanic men who have sex with men, by country of origin, USA, October 2003 to February 2005

	Venezuela ($n = 60$)	Colombia ($n = 101$)	Argentina ($n = 34$)	Puerto Rico ($n = 31$)	Cuba ($n = 122$)	All other LAC countries ($n = 122$)	Test statistic (df = 5)[a]	P value[b]
Age	33.32	30.24	28.91	30.03	34.84	30.15	$F = 9.89$	< 0.001
Years in U.S.	7.1	4.83	3.24	11.65	12.67	8.06	$F = 16.54$	< 0.001
Age at immigration	25.43	24.03	24.44	17.26	22.09	20.07	$F = 6.93$	< 0.001
Primary reason for immigration							NA[c]	NA[c]
Family brought you	10.0% (6)	19.8% (20)	8.8% (3)	22.6% (7)	22.1% (27)	18.0% (22)		
Improve financial status	38.3% (23)	24.8% (25)	58.8% (20)	25.8% (8)	23.8% (29)	39.3% (48)		
To study	15.0% (9)	14.9% (15)	0% (0)	12.9% (4)	1.6% (2)	9.0% (11)		
To live your homosexuality more openly	16.7% (10)	5.0% (5)	17.6% (6)	22.6% (7)	17.2% (21)	14.8% (18)		
To find political asylum	11.7% (7)	18.8% (19)	0% (0)	0% (0)	14.8% (18)	5.7% (7)		
Other	8.3% (5)	16.8% (17)	14.7% (5)	16.1% (5)	20.5% (25)	13.1% (16)		
Greater than high school education	70.7% (42)	81.2% (82)	50.0% (17)	74.2% (23)	65.0% (78)	68.0% (83)	$\chi^2 = 14.19$	0.014
Income > $1 500/month	62.1% (36)	54.1% (53)	47.1% (16)	70.0% (21)	52.1% (63)	64.8% (79)	$\chi^2 = 8.48$	0.132
Currently employed	80.0% (48)	78.2% (79)	82.4% (28)	83.3% (25)	70.3% (83)	84.4% (103)	$\chi^2 = 8.03$	0.154
Internet recruited	45.0% (27)	52.5% (53)	61.8% (21)	58.1% (18)	50.0% (61)	55.7% (68)	$\chi^2 = 3.71$	0.591
HIV positive[d]	34.5% (19/55)	10.3% (9/87)	20.7% (6/29)	22.2% (6/28)	18.4% (19/103)	16.1% (15/93)	$\chi^2 = 29.06$	0.017
HIV positive at time of migration[e]	66.7% (12/18)	55.6% (5/9)	50% (3/6)	0% (0)	0% (0)	13.3% (2/15)	NA[c]	NA[c]
Never been tested for HIV	5.2% (4)	18.2% (14)	6.5% (5)	3.9% (3)	20.8% (16)	35.1% (27)	NA[c]	NA[c]

[a] df, degrees of freedom.
[b] Compares indicated variable for each of the six groups in the table: Venezuela, Colombia, Argentina, Puerto Rico, Cuba, and all other LAC countries.
[c] NA, not applicable.
[d] Among men who have been tested for HIV.
[e] Among HIV-positive men.

TABLE 2. Drug use and sexual behaviors of the sample of Hispanic men who have sex with men in the previous 6 months, by country of origin, USA, October 2003 to February 2005

	Venezuela (n = 60)	Colombia (n = 101)	Argentina (n = 34)	Puerto Rico (n = 31)	Cuba (n = 122)	All other LAC countries (n = 122)	Test statistic (df = 5)[a]	P value[b]
Used crystal	6.7% (4)	9.9% (10)	8.8% (3)	6.5% (2)	5.7% (7)	10.7% (13)	NA[c]	NA[c]
Used cocaine	10.0% (6)	12.9% (13)	11.8% (4)	16.1% (5)	6.6% (8)	13.1% (16)	NA[c]	NA[c]
Used marijuana	28.3% (17)	47.5% (48)	41.2% (14)	22.6% (7)	23.8% (29)	28.7% (35)	$\chi^2 = 18.57$	0.002
Used ecstasy	5.0% (3)	10.9% (11)	5.9% (2)	9.7% (3)	8.2% (10)	15.6% (19)	NA[c]	NA[c]
Used club drug	48.3% (29)	42.6% (43)	32.4% (11)	48.4% (15)	38.5% (47)	39.3% (48)	$\chi^2 = 3.62$	0.603
Used Internet sex chat rooms	66.7% (40)	77.2% (78)	82.4% (28)	71.0% (22)	60.7% (74)	66.4% (81)	$\chi^2 = 10.53$	0.062
Engaged in UAI	48.3% (28)	42.9% (42)	33.3% (11)	58.6% (17)	51.8% (57)	44.9% (53)	$\chi^2 = 5.97$	0.309
Engaged in URAI	35.0% (21)	33.0% (33)	26.5% (9)	38.7% (12)	27.3% (33)	29.2% (35)	$\chi^2 = 2.79$	0.732
Engaged in UIAI	30.0% (18)	30.0% (30)	17.6% (6)	41.9% (13)	38.8% (47)	29.2% (35)	$\chi^2 = 7.96$	0.158
Mean number sexual partners[d]	5	4 (n = 98)	9	5	3 (n = 120)	5 (n = 120)	$\chi^2 = 19.91$	< 0.001
Mean number URAI partners[e]	1.92 (n = 24)	5.60 (n = 35)	1.50 (n = 10)	0.87 (n = 15)	1.51 (n = 39)	1.63 (n = 43)	$F = 1.98$	0.342
Mean number UIAI partners[e]	2.32 (n = 25)	4.28 (n = 36)	1.11 (n = 9)	1.00 (n = 15)	1.61 (n = 46)	1.43 (n = 42)	$F = 6.11$	0.665
Mean number of receptive HIV positive partners[e]	0.56 (n = 16)	0 (n = 16)	0.40 (n = 5)	0.11 (n = 9)	0.20 (n = 20)	0.09 (n = 23)	$F = 7.93$	0.172
Mean number of insertive HIV positive partners[e]	1.31 (n = 13)	0 (n = 16)	0 (n = 4)	0.2 (n = 10)	0.16 (n = 31)	0.12 (n = 26)	$F = 11.34$	0.054

[a] df, degrees of freedom.
[b] Compares indicated variable for each of the six groups in the table: Venezuela, Colombia, Argentina, Puerto Rico, Cuba, and all other LAC countries.
[c] NA, not applicable.
[d] Kruskal–Wallis test for non-normally distributed data.
[e] Among men who reported engaging in UAI in previous 6 months.

TABLE 3. Psychosocial characteristics of the sample of Hispanic men who have sex with men, by country of origin, USA, October 2003 to February 2005

	Venezuela (n = 60)	Colombia (n = 101)	Argentina (n = 34)	Puerto Rico (n = 31)	Cuba (n = 122)	All other LAC countries (n = 122)	Test statistic (df = 5)[a]	P value[b]
Loneliness	2.12	2.16	2.16	2.23	2.17	2.21	$F = 0.13$	0.985
Psychosocial distress	2.2	1.99	2.22	2.41	2.48	2.27	$F = 2.03$	0.072
History of suicide attempts	8.3% (5)	10.9% (11)	11.8% (4)	16.1% (5)	9.9% (12)	11.5% (14)	$F = 0.29$	0.916
Level of Hispanicism	3.87	3.97	3.81	3.97	4.15	3.8	$F = 4.14$	< 0.001
Level of Americanism	3.71	3.71	3.44	3.9	3.41	3.75	$F = 5.42$	< 0.001

[a] df, degrees of freedom.
[b] Compares indicated variable for each of the six groups in the table: Venezuela, Colombia, Argentina, Puerto Rico, Cuba, and all other LAC countries.

Drug use and sexual behaviors of the sample in the previous 6 months by country of origin

The drug use and sexual behaviors of the sample by country of origin are presented in Table 2. In the previous 6 months, 44% of the overall sample engaged in UAI, and 41% used club drugs. Regardless of country of origin, a high proportion of the sample engaged in UAI and used club drugs in the previous 6 months. Men born in Colombia were more likely than other

men in the sample to have used marijuana (47.5%; $P = 0.002$), while men born in Argentina reported the highest number of sexual partners (median 9; $P = 0.001$).

Psychosocial characteristics of the sample by country of origin

The psychosocial characteristics of the sample by country of origin are presented in Table 3. Compared with the rest of the sample, men born in

Cuba had the highest mean level of Hispanicism (mean 4.15; $P < 0.001$), while men born in Puerto Rico had the highest mean level of Americanism (mean 3.90; $P = 0.001$).

Factors associated with UAI in the previous 6 months of the sample

The result of the logistic regression is presented in Table 4. The factors significantly associated with UAI in the previous 6 months were HIV-positive

TABLE 4. Factors associated with unprotected anal intercourse in the previous 6 months among the sample of Hispanic men who have sex with men, USA, October 2003 to February 2005

	Odds ratio	95% confidence interval	P value
Age	0.99	(0.96–1.02)	0.728
Employment status	1.27	(0.77–2.10)	0.334
HIV positive at time of immigration	4.39	(1.53–12.5)	0.006
Club drug use	2.01	(1.32–3.06)	0.001
Number of partners	1.01	(1.00–1.02)	0.044
Loneliness	1	(0.71–1.40)	0.993
Psychosocial distress	1.42	(1.10–1.82)	0.006
History of suicide attempts	0.88	(0.42–1.82)	0.883
Level of Americanism	1.64	(1.19–2.26)	0.002

status at time of migration ($P = 0.006$; 95% confidence interval [CI] 1.53–12.5), club drug use in the previous 6 months ($P = 0.001$; 95% CI 1.32–3.06), number of sexual partners in the previous 6 months ($P = 0.044$; CI 1.00–1.02), psychosocial distress ($P = 0.006$; 95% CI 1.1-1.82), and mean level of Americanism ($P = 0.002$; 95% CI 1.19–2.26). The overall model was highly significant (χ^2 [9 degrees of freedom] = 62.5; $P < 0.0001$).

DISCUSSION

In this paper we report on a large sample of Hispanic MSM born in LAC countries who immigrated to Miami-Dade County, Florida, an AIDS epicenter where Hispanic MSM account for a large portion of the HIV/AIDS cases. Fifty-three percent of participants had immigrated to the United States during the last 5 years, and nearly 20% had been in the United States 2 years or less. An alarmingly high number of the participants reported having UAI and multiple sex partners in the last 6 months, sexual practices associated with HIV transmission and acquisition (27).

Furthermore, 41% of the sample had used club drugs in the previous 6 months. Given the strong association between club drug use and risky sex, use of club drugs further elevates the men's risk of acquiring HIV (28, 29). Given the high HIV prevalence among MSM in Miami-Dade County, these high rates of HIV risk behaviors are particularly concerning. Furthermore,

it is possible that some of the men also engage in risky behaviors when they travel to their native countries.

It is noteworthy that a significant number of participants had never been tested for HIV, despite the high lifetime rates of HIV testing among MSM in general (30) and Hispanic MSM in Miami in particular (31, 32). For instance, 21% of Cubans, 18% of Colombians, and 35% of those in the "other" category had never been tested. Given the high rates of HIV risk behaviors and high seroprevalence among MSM in Miami-Dade County, it is likely that some of the men in our sample are living with undiagnosed HIV infection. Early diagnosis and treatment of HIV infection have beneficial effects for both the individual and society (31). Not only do they improve clinical outcomes, but there is strong evidence that they make individuals less infectious (33–35). This underscores the importance of promoting HIV testing among Hispanic MSM who are recent immigrants. To be maximally effective, these efforts must be culturally tailored and take advantage of familiar technologies that have been effective at reaching Hispanic MSM, such as the Internet (17, 20). Given the increasing evidence of the Internet's viability as a tool for both HIV research and prevention efforts (17, 20, 36) and the large number of men in our sample who frequented Internet chat rooms (69%), the Internet could be a powerful tool for promoting HIV testing among this group.

Across the entire sample, 30% (22/74) of participants living with HIV/AIDS were HIV positive at the

time they immigrated to the United States. Even if a small proportion of men were in their window period, this suggests that the remainder of HIV-positive participants became infected after they immigrated to the United States. If we examine these data separately by country of origin, 66.7% of Venezuelan, 55.6% of Colombian, and 50% of Argentinean men were HIV positive at the time of immigration. Because of the limited access to antiretroviral medications in many LAC countries at the time these data were collected, it is possible that some of these men came to the United States seeking better treatment options. As this study did not focus on HIV-positive men, we are not able to ascertain whether this is because we did not include this response option when we asked men for their primary reason for immigrating to the United States.

The results of our multivariate model echo some of the findings previously reported among general samples of MSM (27, 29) as well as Hispanic MSM (28). As expected, use of club drugs, number of sex partners, psychological distress, and higher level of orientation to American culture were significantly associated with UAI. One of our more interesting findings was the strong association between being HIV positive at the time of immigration and UAI. A number of studies have shown that HIV-positive men have more sexual partners and are more likely to engage in UAI than men who are not HIV positive (37, 38). Few have examined the association between UAI and HIV status at the time of immigration as in the current study.

To rule out the possibility that the association between UAI and HIV-positive status at the time of immigration was being driven by our decision to include HIV status at the time of immigration rather than the more global current HIV status in the logistic regression, we re-ran the model using HIV status instead in a post hoc analysis. HIV status did not emerge as a significant predictor of UAI, whereas all the other factors that were significant in the original model retained significance in this post hoc analysis. This

finding indicates that the association between UAI and HIV status at time of immigration is not merely attributable to overall HIV status. It also suggests that there is something unique about the men who were HIV positive at the time of immigration, over and above their HIV-positive serostatus, that is associated with UAI. Additional work is needed to understand the meaning of this association and its implication on prevention for Hispanic MSM who are recent immigrants.

Our findings need to be interpreted in light of the study's limitations. First, our sample was recruited as part of a larger study designed to compare the effectiveness of using the Internet as a recruitment modality (19) and is not representative of the Hispanic MSM population in Miami-Dade County.

Second, we did not set out to recruit men from specific countries of origin; instead, we formed the groupings based on the data provided by the men who enrolled in the parent study. Thus, the descriptions by country of origin may not be representative of Hispanic MSM who have immigrated from each the six groups we examined. Finally, because the overall study did not specifically focus on immigrants from LAC countries, the questionnaire did not include questions that could have assisted us to better interpret the current findings.

In conclusion, this paper provides an important first step in understanding the sexual and drug use behaviors of Hispanic MSM who immigrated to Miami-Dade County. Studies that examine HIV risk behaviors of Hispanic

MSM in their countries of origin as well as in the United States are needed to advance the HIV prevention effort for this at-risk population.

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RESUMEN

Comportamientos de riesgo de infección por el VIH en hombres latinoamericanos y caribeños que tienen sexo con hombres en Miami, Florida, EUA

Objetivo. Describir las prácticas sexuales, el consumo de drogas y los factores psicosociales y de predicción del coito anal sin protección (CASP), en una muestra de hombres nacidos en América Latina y el Caribe (ALC) residentes actualmente en el Condado de Miami-Dade, Florida, que tienen sexo con hombres.

Métodos. En total, 566 hispanos que tienen sexo con hombres (HSH), captados en la comunidad y sitios de Internet, completaron una encuesta autoaplicada por computadora que abordaba los factores socioeconómicos, el consumo de drogas, el comportamiento sexual y los factores psicológicos. El estudio se centró en 470 hombres nacidos en ALC, incluido Puerto Rico. La muestra se analizó por país de origen, prácticas sexuales, consumo de drogas y factores psicológicos. Luego se unieron los grupos y se analizaron los factores asociados con el CASP en los 6 meses previos en toda la muestra.

Resultados. En los 6 meses previos, 44% de la muestra tuvo CASP y 41% consumió drogas de las llamadas recreativas. Según el análisis multifactorial, los factores asociados significativamente con el CASP en los 6 meses previos fueron: los problemas psicológicos, el mayor número de parejas sexuales, el consumo de drogas recreacionales, la positividad al VIH en el momento en que inmigró y el mayor grado de orientación hacia la cultura estadounidense.

Conclusiones. Muchos HSH nacidos en ALC incurren en comportamientos de riesgo de infección por el VIH en el epicentro de sida del Condado de Miami-Dade, Florida. Se deben aplicar intervenciones culturalmente apropiadas para combatir estos comportamientos de riesgo en la población marginada estudiada.

Palabras clave Epidemiología, infecciones por VIH, asunción de riesgos, conducta sexual, América Latina, Región del Caribe, Estados Unidos de América.