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HIV-related Risk Behaviors among a Sample of Men who have Sex with Men in Puerto Rico: An Overview of Substance Use and Sexual Practices

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Abstract

Objective—Despite the growing impact of the human immunodeficiency virus (HIV) epidemic in Puerto Rico (PR), limited epidemiological research on men who have sex with men (MSM) has been conducted. The aim of this study was to describe HIV-related risk behaviors in a sample of MSM in PR.

Methods—A secondary data analysis of a household survey of the adult population of PR was performed in order to describe substance use and sexual practices related to HIV transmission and seropositivity for hepatitis A virus (HAV), hepatitis B virus (HBV), hepatitis C virus (HCV), HIV, and type 2 herpes simplex virus (HSV-2) in MSM. Data regarding substance use and sexual practices were collected using audio computer-assisted self-interviewing (A-CASI). Descriptive statistics were used to examine lifetime and recent (12 months) prevalence of substance use and sexual practices.

Results—Of the 640 men interviewed, 41 (6.4%) reported having ever had sex with another man on at least one occasion. Approximately one-fourth of MSM reported having used marijuana (24.4%) and cocaine (24.4%) in the past 12 months. Nearly 42% of the MSM reported an early age of sexual initiation (<15 years), and 61% reported having had at least 10 sexual partners in their lifetime. Seropositivity rates for HAV, HSV-2, HIV, HCV, and HBV were 43.3%, 32.4%, 7.3%, 4.9%, and 4.9%, respectively.

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Conclusion—This is the first study to attempt to examine high-risk behaviors related to HIV in a population-based sample of MSM in PR. Concurrent efforts that will help to intensify research and prevention initiatives among MSM are necessary, especially those that will enhance awareness of screening for HIV, HCV, and other sexually transmitted infections, access to HAV and HBV vaccinations, substance use, and identification of social barriers.

Keywords

Men who have Sex with Men (MSM); HIV Infection; Sexually Transmitted Infections; Sexual Behavior; Substance Use; Epidemiology; Puerto Rico

Few studies in the Caribbean have emphasized the importance of understanding human immunodeficiency virus (HIV)-related risk behaviors among men who have sex with men (MSM) (1). In 2006, surveillance data indicated that the overall HIV incidence rate in Puerto Rico (PR) was twice the estimated US rate and 1.5 times higher than the estimated rate for Hispanics in the US (2). Contrary to what has been the case with regard to the primary method of HIV transmission in the US, transmission resulting from injection drug use (IDU) practices accounts for more than half (53%) of the HIV cases in Puerto Rican men, whereas sex among men accounts for 22% of these cases (3, 4). According to the PR HIV Surveillance System, there was a decrease of 3.4% in the estimated number of HIV cases among IDU men in PR between 2005 and 2007. During the same period, a 9.1% increase in HIV prevalence among MSM was observed, suggesting that risks among this group might be contributing to the HIV epidemic (5).

Despite the epidemiological importance of MSM in the HIV epidemic in PR, current data on behavioral risks among MSM are scarce. Therefore, the present study described HIV-related risk behaviors in a sample of MSM in PR.

Methods

The parent study consisted of a cross-sectional survey of the non-institutionalized population of PR, aged 21–64 years old. The sampling design and data collection procedures of this study have been described in detail elsewhere (6, 7). Study procedures were reviewed and approved by the Institutional Review Board (IRB) of the University of Puerto Rico Medical Sciences Campus. A face-to-face interview covered sociodemographic characteristics, whereas the audio computer-assisted self-interviewing system (A-CASI) ascertained drug use practices and sex-related risk behaviors. Seropositivity status with regard to hepatitis A virus (HAV), hepatitis B virus (HBV), hepatitis C virus (HCV), HIV, and type 2 herpes simplex virus (HSV-2) was determined by laboratory analyses.

Statistical Analysis

Of the 640 men interviewed, 41 (6.4%) reported having had sex with another man on at least one occasion; thus, the analysis presented in this report is limited to those men who reported having had sex with men in their lifetimes ($n = 41$). Frequency distributions and summary measures were used to describe the study sample. All statistical analyses were performed using Stata 10 (StataCorp LP, College Station, TX).

Results

Sociodemographic Characteristics

The mean age of the sample was 43.4 ± 11.4 years. Most were born in PR (90.2%) and had less than 12 years of education (73.2%); 31.7% had never been married. More than half of the sample (63.4%) reported an annual income of less than \$20,000 (Table 1). Seropositivity

rates in this group were 46.3% for HAV, 32.4% for HSV-2, 7.3% for HIV, and 4.9% for HBV and 4.9% for HCV. The majority of the study sample (68.0%) did not have serologic evidence of HBV vaccination. All HIV-seropositive MSM were aware of their status; however, the majority of MSM were unaware of their HBV and HSV-2 serostatus (100% and 91%, respectively) (data not shown).

Substance Use

More than half (63.4%) of the study group reported a lifetime use of alcohol (97.6%), cigarettes (85.4%), and marijuana (63.4%). More than one quarter reported a lifetime use of sedatives (26.8%), and approximately 20% reported a lifetime use of amphetamines and heroin (Table 2). Approximately one-fourth of MSM reported having used marijuana (24.4%) and cocaine (24.4%) in the past 12 months.

Sexual practices

Fewer than half of the MSM reported having had their first sexual experience before age 15; and more than half (60.5%) reported having had at least 10 sexual partners in their lifetime. The lifetime prevalence of insertive and receptive anal sex was 80.5% and 39.0%, respectively. The majority (87.8%) reported that they had engaged in vaginal sex; of those, 63.4% reported having had more than five female partners prior to the survey. Self-report of sexual practices in the last 12 months showed that, although lower than lifetime estimates, 35.5% engaged in insertive anal sex and 22.6% in receptive anal sex with a man in the last 12 months. More than 80% reported having had vaginal sex in that same time period.

Discussion

Our analysis showed that 6.4% of the men interviewed reported having had sex with another man on at least one occasion. These estimates are slightly higher than those reported in a recent population-based sample of adult MSM in the US (5.2%) (8). While the inferences that can be drawn from this study might be limited, this study showed that MSM in PR engage in high-risk behaviors that have consistently been reported as being predictors of HIV infection.

In this sample, the vast majority who were seropositive for HSV-2 and HBV were unaware of their serostatus. Also, participants reported a low HBV vaccination rate. Given that the participants of this sample were, on average, above 40 years of age, and that HBV vaccination started in PR in 1992 (9), particular attention has to be paid to any opportunity to enhance the awareness of and access to HBV vaccination within this group. This study also reported recent use of marijuana, cocaine, and other substances. Given the strong association of drug use with high-risk sexual behaviors (10, 11), an understanding of the interplay between substance use and such behaviors is needed (12).

This study also identifies a young age of sexual onset as well as a high number of lifetime sexual partners. This study also ascertained that, in the last year alone, 35.5% and 22.6% of the study sample had engaged in insertive or receptive anal sex, respectively. Yet, during the same time period, a significant proportion of study participants reported having had vaginal sex. These findings are supported by studies that reported a bridge population in the transmission of sexually transmitted infections (STIs) (7, 13, 14). These data might have important implications concerning women's risks for becoming infected with HIV. Therefore, it is important to understand the heterogeneity of sexual practices/partners within this group in order to document factors that might place different groups at risk for HIV infection.

The findings of this study need to be interpreted with caution because of its inherent limitations. The small sample size limited the evaluation of drug use and sexual practices across various subgroups. Sample size also limited the opportunity to conduct multivariate analyses to determine correlates of HIV risk. Information concerning the context of that use is lacking. Lacking as well are data regarding the kinds of sexual behavior practiced by participants in which condoms were known to have been used. Consequently, although this study documents MSM's sexual practices with both male and female sexual partners, the use of condoms with these partners could not be explored. Furthermore, we were unable to examine MSM's sociocultural contexts. Other known factors such as violence, stigma, homophobia, social networks, and the construction of gender identities should also be addressed when attempting to understand the HIV-related risks to which the participants of this group are exposed (15).

In conclusion, this study provides an important first step toward a more complete understanding of the sexual behaviors and the patterns of drug use of MSM in PR. Concurrent efforts to help intensify research and prevention initiatives among MSM are necessary. Especially exigent is enhancing awareness of and screening for HIV, HCV, and other STIs providing access to HAV and HBV vaccination is another urgent need. Finally, it is vital that knowledge regarding substance use and social barriers, including the identification of the latter, increase as a mechanism for HIV/STI prevention and control in PR.

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Table 1

Sociodemographic characteristics and serostatus for viral infections of the study sample (N = 41)

Characteristics	Number	Percent (%)
<i>Age group (years)</i>		
21–29	4	9.8
30–39	11	26.8
40–49	12	29.3
50–64	14	34.1
Mean ± SD: 43.4 ± 11.4		
<i>Place of birth</i>		
Puerto Rico	37	90.2
United States	3	7.3
Other	1	2.5
<i>Years of education</i>		
<12	30	73.2
≥12	11	26.8
<i>Marital status</i>		
Never Married	13	31.7
Married/Consensual union	20	48.8
Divorced	8	19.5
<i>Annual family income</i>		
<\$20,000	26	63.4
>\$20,000	15	36.6
<i>Health-care coverage</i>		
Private	18	43.9
Public	15	36.6
None	8	19.5
<i>Seropositivity status</i>		
HAV	19	46.3
HSV-2	11	32.4
HIV	3	7.3
HBV	2	4.9
HCV	2	4.9
<i>Self-reported lifetime history of STIs</i>		
Yes	7	17.1
No	34	82.9
<i>Vaccinated for HBV</i>		
Yes	8	32.0
No	17	68.0

SD: standard deviation; HAV: hepatitis A virus; HSV-2: type 2 herpes simplex virus; HIV: human immunodeficiency virus; HBV: hepatitis B virus; HCV: hepatitis C virus; STIs: sexually transmitted infections

Table 2

Substance use and sexual practices of the study sample (N = 41)*

Behaviors	Lifetime		Last 12 months	
	n	%	n	%
<i>Substances used</i>				
Alcohol	40	97.6	31	75.6
Cigarette	35	85.4	26	63.4
Marijuana	26	63.4	10	24.4
Cocaine	19	46.3	10	24.4
Sedatives or tranquilizers	11	26.8	6	14.6
Amphetamines or stimulants	8	19.5	7	17.1
Heroin [†]	8	19.5	--	
Opiates	5	12.2	2	4.9
Inhalants	3	7.3	1	2.4
Steroids	2	4.9	1	2.4
Hallucinogens	1	2.4	1	2.4
<i>Sexual practices</i>				
Age at first sexual encounter (years)				
<15	17	41.5	--	
≥15	24	58.5		
Sexual partners [‡]				
0–1	1	2.6	--	
2–9	14	36.9		
≥10	23	60.5		
Male sexual partners in insertive anal sex				
0	8	19.5	20	64.5
1–5	27	65.9	11	35.5
>5	6	14.6	0	0
Sexual partners in receptive anal sex				
0	25	61.0	24	77.4
1–5	12	29.2	6	19.4
>5	4	9.8	1	3.2
Vaginal sex partners				
0	5	12.2	5	17.2
1–5	10	24.4	23	79.3
>5	26	63.4	1	3.5
Sexual encounters with male sex workers				
Yes	10	24.4	3	9.7
No	31	75.6	28	90.3
Male sex worker				
Yes	5	12.2	2	6.5
No	36	87.8	29	93.5

Behaviors	Lifetime		Last 12 months	
	n	%	n	%
Sexual encounters with injection drug users				
0	32	80.0	30	93.8
1-5	5	12.5	1	3.1
>5	3	7.5	1	3.1
Sexual encounters with partners who had STIs				
0	28	77.8	37	92.5
1-5	7	19.4	3	7.5
>5	1	2.8	0	0
Sexual relationships with partners who had HIV				
0	33	89.2	39	97.5
1-5	3	8.1	1	2.5
>5	1	2.7	0	0

* Not all data were available for all subjects; STIs: sexually transmitted infections; HIV: human immunodeficiency virus

† No information available about heroin use and number of sexual partners in the last 12 months.