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HIV Testing among men in Curitiba, Brazil

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Abstract

In 2015, a community-wide intervention was launched in the city of Curitiba to evaluate the uptake of multiple HIV testing. A three-stage cluster sampling of 4800 men aged 15–64 years was selected in Curitiba. Logistic regression models were used to establish driving factors of HIV testing over the past 12 months.

In the total sample, 49.5% have tested for HIV once in lifetime and 18.7% in the last 12 months. Among MSM, the proportions were much higher: 75.9% and 47.8% respectively. In the multivariate analysis, a significantly higher likelihood of HIV testing was found for young men (15–24 years), men with better educational level, those with more than 6 casual partners, and MSM compared to heterosexual men. The results indicate that the intervention to increase HIV diagnosis has substantially expanded MSM access to HIV testing.

Keywords

Survey; HIV testing; multiple testing services; MSM; Brazil

Introduction

In Brazil, several initiatives were undertaken in the 2000s to monitor risky behaviors related to HIV infection. In 2004, the Ministry of Health (MoH) conducted a national survey (PCAP) to investigate the awareness, practices and risky behaviors related to sexually transmitted infections. Periodical rounds of this survey (2008, 2013) provided an opportunity to supply information for the evaluation of prevention strategies.

Despite MoH developing and implementing a national policy for antiretroviral therapy provision to all individuals diagnosed with HIV, encouraging frequent HIV testing remains necessary. PCAP findings for 2013 show that the proportion of HIV testing over the 12

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months prior to the survey was only 10% among males (http://www.aids.gov.br/sites/default/files/anexos/publicacao/2016/59277/pcap_2013_pdf_28676.pdf).

Recently, several initiatives to encourage HIV testing have been introduced in the country. These include mobile unities (trailers) and collaboration with non-governmental organizations (NGOs) for stimulating HIV testing, known as “Keep track” (“*Fique sabendo*”) program. Particularly in the City of Curitiba, Paraná, in 2015, a multi-disciplinary team launched a community-wide intervention in the city to evaluate the acceptability and uptake of multiple HIV testing services (HTS).

In the end of year 2015, the survey of awareness, attitudes and practices (PCAP) was carried out among men aged 15–64 living in the city of Curitiba. In this study, we use the PCAP findings to estimate HIV testing over the past 12 months preceding the survey to establish vulnerabilities and driving factors.

Methods

A three-stage cluster sampling was selected among the male population aged 15–64 residing in Curitiba. The sample size for this study was calculated to estimate HIV testing over the past 12 months at 95% confidence intervals and 1% precision, taking into account the design effect (1.35).

Bivariate and multivariate logistic regression models were used to investigate factors associated to HIV testing over the past 12 months. The models included sociodemographic variables (age group, race, lives with partner and educational level), self-perception of risk to HIV infection and risky practices in the past 6 months (six or more casual partners; use of illicit drugs; had sex with a partner known to be HIV infected; paid to have sex). Men who have sex with men (MSM) were considered separately in the analysis to be compared with heterosexual men.

Results

In the total sample of men, approximately 50.4% are young adults (less than 35 years), 12.4% have not completed high school, and 64% are white. The proportion of MSM is 3.7%. Prevalence of self-perception of risk is 33.1% (52.4% among MSM and 32.5% among heterosexual men). In the last 6 months preceding the survey, 5.2% had 6 or more casual partners; 7.0% used illicit drugs; 2% paid for sex; and 3.2% had sex with a partner known to be HIV infected.

HIV testing at least once in lifetime was 49.5%; 10.8% over the last 6 months; and 18.5% over the last 12 months prior to the interview. Among MSM, the proportions were much higher: 75.7%, 27.2%, and 47.4% respectively. Approximately 26.0% of MSM had already had an oral fluid test with a proportion four-fold higher than among heterosexual men (6.5%).

Table 1 presents the results from logistic regression models using HIV testing over the last 12 months as the response variable. In the bivariate analyses, significant odds-ratios were

found for age group, educational level, self-perception of risk, more than 6 casual partners, sex with a known HIV infected partner, and had sex with men. In the multivariate analysis, a significantly higher likelihood of HIV testing was found for young men (15–24 years) compared to those aged 25 years or over; men with high school, those with more than 6 casual partners, and MSM compared to hetero-sexual men.

Discussion

The present study showed a very low frequency of HIV testing among men aged 15–64 years of the city of Curitiba. Less than 20% had an HIV test in the last 12 months preceding the survey. Among MSM, however, HIV testing was significantly higher and the target of testing 90% of MSM is likely to be exceeded in less than 2 years.

The statistical analysis showed self-perception of risk to HIV infection was associated to HIV testing in the last year. Among men who had risky sexual practices in the past 6 months, HIV testing was more frequent, as well. Nevertheless, less than one third of men with six or more casual partners tested for HIV over the past 12 months.

Men with low educational level are frequently more prompt to risky sexual practices, usually unaware of HIV transmission mechanisms or preventive strategies. On the other hand, the feeling of being unattainable by HIV infection also affects the perception of risk (Wei et al., 2014). Findings of this study show that almost half of MSM do not feel to be at risk to be infected in the next 12 months and only 2.3% self-rated the risk as high.

Another relevant finding of this study was the significantly lower frequency of HIV testing in the last 12 months among young men (15–24 years old). Considering exposure to risky sexual practices usually being more frequent among younger, these results call attention for the vulnerability of young men and the need for promoting interventions to stimulate HIV testing since the beginning of sexual activity (Kann et al., 2016).

Besides the multiple services for HIV testing, in 2015, a project was specifically implemented in Curitiba focused on stimulating HIV testing among MSM. The “A Hora É Agora” (The Time Is Now) program offers a web-based HIV self-testing platform. Individuals with reactive tests are referred to public health facilities for confirmatory tests and peer navigators facilitate enrollment in treatment within 90 days of diagnosis (Lippman et al., 2014).

After several initiatives and strategies during the past decade to expand early HIV diagnosis and treatment to reduce transmission (MacCarthy, Brignol, Reddy, Nunn, & Dourado, 2014), the results indicate that the intervention to increase HIV diagnosis may substantially increase MSM access to HIV testing. Follow-up of MSM testing via the web platform, and other service evaluations will inform program improvements for Curitiba and will facilitate expansion to other Brazilian cities.

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Table 1. Results from logistic regression models with HIV testing in the last 12 months as the response variable.

Variables	OR	p-value	Adjusted OR	p-value
Age group				
15–24	0.417	0.000	0.493	0.001
25–34	1.000	-	1.000	-
35–44	0.866	0.281	0.946	0.709
45–54	0.809	0.117	0.929	0.621
55–64	0.626	0.007	0.759	0.125
Lives with partner				
No	1.000	-	1.000	-
Yes	1.012	0.904	0.943	0.646
Educational level				
Incomplete high school	1.000	-	1.000	-
High school or more	2.451	0.000	2.714	0.000
Skin color				
Non white	1.000	-	1.000	-
White	0.876	0.191	0.819	0.074
Self-perception of risk				
None	1.000	-	1.000	-
Yes	1.297	0.008	1.090	0.484
Drug User ^b				
No	1.000	-	1.000	-
Yes	1.091	0.613	0.909	0.624
6 or more casual partners ^b				
No	1.000	-	1.000	-
Yes	2.048	0.001	1.932	0.001
Paid for sex ^b				
Yes	1.000	-	1.000	-
Yes	1.621	0.029	1.354	0.189
Sex with HIV infected partner ^b				
No	1.000	-	1.000	-
Yes	1.536	0.075	1.480	0.163
MSM				
No	1.000	-	1.000	-
Yes	4.335	0.000	3.749	0.000

^a Odds ratio adjusted from multivariate logistic regression significant at the 5% level.

^b In the last 6 months.