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UNPROTECTED SEX, UNDERESTIMATED RISK, UNDIAGNOSED HIV AND SEXUALLY TRANSMITTED DISEASES AMONG MEN WHO HAVE SEX WITH MEN ACCESSING TESTING SERVICES IN A NEW ENGLAND BATHHOUSE

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Abstract

American men who have sex with men (MSM) continue to have increased rates of HIV and STD. Between 2004 and 2010, 1155 MSM were screened for HIV and/or STD at a Providence, RI, bathhouse. The prevalence of HIV was 2.3%; syphilis, 2.0%; urethral gonorrhea, 0.1%; urethral Chlamydia, 1.3%; 2.2% of the men had hepatitis C antibodies. Although 43.2% of the men engaged in unprotected anal intercourse in the prior two months, the majority of the men thought that their behaviors did not put them at increased risk for HIV or STDs. Multivariate analyses found that men who engaged in unprotected anal intercourse were more likely to have had sex with unknown status or HIV-infected partners; have sex while under the influence of drugs; tended to find partners on the internet; and were more likely to have a primary male partner. Men who were newly diagnosed with HIV or syphilis tended to be over 30 years old; had sex with an HIV-infected partner; had a prior STD diagnosis; and met partners on the internet. For 10.5% of the men, their HIV testing in the bathhouse was the first time that they had ever been screened for HIV. Of 24 men who were newly diagnosed with HIV infection, only one was not successfully linked to care. These data suggest that offering HIV and STD screening in a bathhouse setting is successful in attracting MSM who were at increased risk for HIV and/or STD acquisition or transmission, and may help decrease spread.

Keywords

Sexually transmitted infections; HIV; sexual risk; men having sex with men (MSM); bathhouse

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INTRODUCTION

Recent data from many parts of the United States suggest that HIV and other sexually transmitted diseases are increasing significantly among men who have sex with men (MSM).^{1,2} Secular trends are particularly pronounced in New England, where the majority of the syphilis cases in recent years in Rhode Island and Massachusetts have been among MSM^{3,4}. Moreover, 50% of the individuals with new diagnoses of syphilis were also co-infected with HIV. The co-prevalence of HIV and STD epidemics among MSM potentiate the transmission of each other^{5,6}, creating a syndemic that poses challenges for medical providers and public health officials..

Since the earliest days of the AIDS epidemic, bathhouses have been implicated in the transmission of HIV in major metropolitan areas^{7,8}. Although more recent studies suggest specific social media found on the Internet, including sexually oriented web sites for MSM, have played increasingly prominent roles as venues for individuals to meet⁹, bathhouses continue to provide environments where HIV and STD risk behavior may occur¹⁰⁻¹². Moreover, unlike Internet-based sites, bathhouses afford a physical venue where HIV and STD testing, as well as counseling, can be performed¹³. With the advent of HIV rapid testing, these venues offer the ability to efficiently and effectively provide hard-to-reach, at risk individuals with relevant health information during their bathhouse visit¹⁴.

Over the past decades, health educators and public health officials have created HIV testing services in bathhouses around the United States and overseas^{8,11-15}. In 2000, a group of health educators, clinicians, and community activists collaborated to offer Hepatitis A and B vaccinations to interested patrons of the largest bathhouse in New England. By 2004, this health collaborative began to offer HIV rapid testing. Over subsequent years, additional services have been introduced, including testing urine for gonorrhea and Chlamydia, and serologic testing for syphilis and Hepatitis C. Since the project's inception, more than one thousand MSM have been tested and/or vaccinated.

The purpose of the current report is to describe the demographics, risk practices, and risk perceptions of the male clients of the bathhouse who availed themselves of HIV/STD testing services. The information gleaned in this study could help in the development of venue-based interventions that can further reduce the spread of HIV and STDs among MSM.

METHODS

Participants were offered services during three-hour sessions held two to four times a month, starting in 2004. A dedicated three-room space was developed for HIV and STD counseling, testing, and confidential delivery of results. The site included the equipment and supplies necessary to perform phlebotomy and basic laboratory activities, as well as rapid HIV testing. A protocol was developed and approved by the institutional review board of Brown's academic medical center (Lifespan), which included a self-administered questionnaire which asked participants about sexual health, behavioral risk, and interest in having health services provided in the bathhouse setting. The instrument used for the behavioral and demographic assessment was adapted from the Project EXPLORE assessment tool¹⁶. The survey and subsequent counseling were administered by trained study personnel. Participants completing the survey were compensated with a \$10 gift certificate. Men who approached bathhouse staff were able to obtain testing services without participating in the study in order to optimize the likelihood that bathhouse clients would be more likely to undergo testing for HIV and/or STD. All individuals who underwent testing received pre- and post-test counseling. Contact information was obtained in order to be able to provide test results to individuals after they left the bathhouse.

Participants were offered HIV rapid testing using whole blood. OraQuick™, Unigold™, or Clearview™ HIV rapid tests were all used at different points in the study; selection depended on which test kit was available at time of testing. Blood specimens were saved from all participants who underwent HIV rapid testing, and reactive specimens were confirmed by Western Blot analysis. All individuals who consented to phlebotomy were also offered the opportunity to have serological testing for syphilis performed, using the RPR test, with reactive tests confirmed by FTA-ABS. In August, 2005, urine screening for gonorrhea and Chlamydia were added to the protocol, using the Aptima™ nucleic acid amplification test. In 2007, screening for hepatitis C antibodies was also offered. All diagnostic testing, except for rapid HIV testing, was performed at the Rhode Island Department of Health Laboratory.

Risk reduction counseling was delivered to all men seeking testing¹⁶ regardless of study participation, using “a Stages of Change” client-centered model,¹⁷ and appropriate referrals were made at the time of their bathhouse visit. Participants were subsequently contacted by phone, or seen in person, within a week to review test results, and to assess whether referrals to linkage services were needed.

Descriptive and summary statistics were generated for all of the men who presented for testing services at the bathhouse during the study period, regardless of survey participation. For the subset of men who agreed to participate in the behavioral risk assessment study, logistic regression models were fitted for two outcomes: unprotected anal sex (self-report), and HIV/syphilis seropositivity. Participants were asked if they engaged in unprotected anal or oral sex during the last two months, regardless of the venue where it occurred.

Perceived HIV risk was self reported. Participants were asked to rate their perceived HIV risk as: 1) not high at all; 2) not really high; 3) somewhat high; and 4) very high. For purposes of the multivariate analyses, we dichotomized perceived HIV risk as 1) somewhat high or very high (high) compared to 2) not high at all or not really high (low, referent). With respect to partner type, participants were given a choice regarding specific types of relationships. These included: “committed,” “monogamous with a man; committed, monogamous with a woman”; “married to a woman”; “sex with one man”; “sex with one woman; sex with both men and women”; “none are primary partner”; “sex with man I love”; “sex with a woman I love”; “single”; and “none of the above.” In multivariate analyses, specific partner types were only included in the models if they were statistically significant in bivariate analyses. Demographic and behavioral variables were correlated with each outcome. Likelihood ratio tests were used to compare models to one that included all independent variables presumed to be associated with unprotected anal sex or HIV/syphilis seropositivity. We determined *a priori* that race, age and number of sex partners would be included in all final models due to the strong potential for these variables to confound observed associations. Results were reported as odds ratios (OR) with 95% confidence intervals (CI). All analyses were performed using STATA 11 (College Station, TX) statistical software.

RESULTS

Bathhouse HIV and STD Testing

Between June 2004 and November 2010, 1155 men presented for HIV and/or other testing services at the bathhouse. Of these men, 513 men (44%) consented to participate in a behavioral risk assessment study; the rest requested testing services only. Individuals were offered a menu of possible tests, and some declined because of having previously been diagnosed with an infection (e.g. HIV), and others deferred specific tests because of recent

testing elsewhere, or their perception that they were not at risk for the infection. Almost none of the men (99%) presented with symptoms as a reason for testing.

One thousand sixty three men were tested for HIV, with a prevalence of 2.3%; 850 were tested for syphilis, with a prevalence of 2.0%; 889 men were tested for genitourinary gonorrhea or chlamydia, with respective prevalence of 0.1% and 1.3% respectively; and 185 men were tested for hepatitis C antibodies, with a prevalence of 2.2%. Their age range was (range: 18 -72), with 54.6% being between the ages 31 and 50 (Table 1). Men come from multiple states, with the largest number residing in Massachusetts (49.5%) and Rhode Island (40.2%). A majority of the men were Caucasian (81.6%) and had attended high school and/or had additional education (80.4%) (Table 1).

Study Population and Behavioral Assessment

Among the 513 men who completed the behavioral assessment, the majority (51.9%) did not have a primary partner and had sex only with other MSM. Among the others, 13.3% reported sex with both men and women and did not have a primary partner; 8.8% of men had a primary female partner, and 4.5% of them were married to women. In addition, 22% of the men indicated that they had a primary male partner. Thirty-one percent of the men had engaged in both unprotected anal and oral intercourse in the two months prior to HIV testing; 15.2% had engaged in unprotected anal intercourse but not unprotected oral intercourse; and 20.2% had engaged in unprotected oral intercourse but not unprotected anal intercourse (Table 2). The participants were asked whether they thought that their behavior increased their risk of HIV infection. Although men who engaged in the least risky practices (no unprotected oral or anal activities) were most likely to consider their behaviors to not be associated with risk, two thirds (65.4%) of men who engaged in both unprotected oral and anal sex thought that their risk of acquiring HIV was not high; and 75.6% of the men who engaged in unprotected anal, but not oral, activity believed that their risk for HIV infection was not high (Table 2).

Participants were asked where they met sexual partners. The most common responses, besides the bathhouse, included bars and nightclubs (30.6%); adult book stores (29.6%); Internet sex sites (36.3%); and public cruising areas (22.8%). Other less common venues included gyms, friendship networks and other social organizations. Although only 12.1% of the men reported that they had unprotected sex while high on drugs or alcohol, 75.0% of those who did, indicated that these episodes were associated with unprotected intercourse. More than one quarter (26.7%) of the men indicated that they had had sex with an HIV-infected partner at least once in their lives.

Multivariate analyses indicated that men who engaged in unprotected anal intercourse tended to be more likely to have had sex with HIV-infected partners; to have had sex while under the influence of drugs; to have found partners on the Internet; and to have a primary male partner (Table 3). They did not differ from the other men in terms of their demographics or their self-perceived HIV risk. Men who were newly diagnosed with HIV or syphilis tended to be over 30 years old. These men were also more likely to have had sex with an HIV-infected partner; have had prior STD diagnoses; and to have met partners on the Internet (Table 4). Men with syphilis or HIV did not differ from other MSM by race, number of partners, or frequency of anal sex, and were less likely to report meeting sexual partners in the bathhouse.

Of the 24 men who were newly diagnosed with HIV infection, all but one was successfully linked to care. For 10.5% of the sample, their bathhouse test was their first HIV test, and one of the 109 first time HIV testers was found to be infected. Although 80.1% of the men reported that they had a primary care provider, 40.5% indicated that they would either not be

comfortable being tested for HIV by their providers and/or they would not be comfortable sharing HIV or STD test results with their providers. All but one of the study participants (0.2%) indicated satisfaction with receiving HIV testing results the same day in the bathhouse.

DISCUSSION

This study demonstrated that HIV and STD testing in a bathhouse environment was feasible and acceptable, leading to the diagnosis of new HIV and STD infections. This approach has been found to be a successful way to screen high-risk MSM populations in other cities across the United States.^{13-15, 18} The HIV prevalence among 1,063 MSM tested was 2.3%, which is higher than any other voluntary counseling/testing site in New England. In addition, the ability to screen for other STDs allowed for the detection of a substantial number of individuals with syphilis, as well as urethral chlamydia and hepatitis C.

One of the unique features of the MSM who tested was their wide geographic dispersion. Rhode Island hosts the only two bathhouses in New England; and thus, individuals who were interested in meeting partners in this setting had no other local choices. In addition, the study underscored the mobile nature of at-risk MSM, with participants being seen from nine non-New England states and the District of Columbia. These individuals reported behaviors that put them at increased risk for HIV and STDs, suggesting the need for a regional approach to understand the social and sexual networks of MSM who meet sexual partners in these venues.

This study also found that many men who sought services in the bathhouse had female partners, thus, this venue might be only one of a few places where these individuals could receive health information, and could be educated about ways in which they could most optimally protect their partners. With the demonstration of the efficacy of antiretroviral chemoprophylaxis,¹⁹ bathhouses may provide an optimal setting to educate at risk MSM about the benefits and risks of this approach. Spielberg and colleagues found that MSM who patronized Seattle bathhouses were amenable to receiving education and counseling in those venues²⁰. The current study also found that the riskiest men met partners on the Internet and other venues, but it is possible that health education accessed on line could be reinforced by venue-based health educators who could offer on site testing. Many participants also reported having unprotected sex while under the influence of alcohol and/or other drugs, suggesting the need to develop interventions that address the interaction of substance and sexual activity.

Only a minority of the men tested in the bathhouse indicated that they had a primary care physician and would be comfortable being tested for HIV and syphilis by their provider, a finding noted previously among New England MSM²¹. These data suggest the need for increased primary care provider training to enhance cultural awareness, so that at-risk MSM patients become more comfortable in discussing their risks in primary health care settings,²² so they can avail themselves of testing services. However, in the meantime, the scaling up of testing in venues that high-risk men frequent, such as bathhouses, may be able to further arrest the spread of HIV and STDs among MSM.

One of the limitations of this study stemmed from the ability of the men to choose to be tested without answering the demographic and behavioral questionnaire, in order to avoid creating impediments to testing when it was offered. Since less than 50% of the men tested chose to provide additional demographic and behavioral information, the findings in this study may under represent the true prevalence of HIV and STDs at the bathhouse. Furthermore, the behavioral assessment of study participants is likely to be a conservative

estimate of the complete bathhouse population, since individuals who did not want to think about their risks would be more likely to avoid testing. Future interventions in this setting will need to focus on the optimal ways to reach men who haven't been tested in this, or other settings.

Public funding for HIV and STD programs has often been categorical, with grants to individual state health departments to focus on either HIV or specific STDs. The findings from this study suggest the need for a regional and a more comprehensive approach to decrease HIV and STD prevalence and incidence among New England MSM.. The funding for this project was quite limited, resulting in testing being available only 6 to 12 hours per month, so it is hoped that these data will encourage public health authorities to increase support for this kind of work, so that HIV and STD testing services can be offered in these venues more frequently, in hopes of decreasing HIV and STD transmission in this population.

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Table 1

DEMOGRAPHICS OF MEN WHO HAVE SEX WITH MEN ACCESSING SEXUALLY TRANSMITTED DISEASE TESTING SERVICES IN A RHODE ISLAND BATHHOUSE (N = 513)

VARIABLE	PREVALENCE (%)
<u>Age</u>	
18 – 30	18.1
31 – 50	54.6
>51	27.3
<u>Residence</u>	
Rhode Island	40.2
Massachusetts	49.5
Connecticut	4.9
New Hampshire	1.9
Maine	1.0
Other States *	2.5
<u>Race/Ethnicity</u>	
Caucasian	81.6
Black/African-American	3.5
Latino	10.0
Asian-Pacific Islander	3.3
Native American	0.8
Other	0.8
<u>Education</u>	
Did not graduate high school	2.1
High School Graduate	17.5
Post-High School Education	80.4

* 2 from California, District of Columbia, Pennsylvania

1 from Arizona, Illinois, Minnesota, New Jersey, New York, Texas, Virginia

Table 2

SEXUAL PRACTICES AND RISK PERCEPTIONS OF MEN WHO HAVE SEX WITH MEN PRIOR TO SEXUALLY TRANSMITTED DISEASE TESTING IN A RHODE ISLAND BATHHOUSE (N=513)

Risk Behaviors		Prevalence of Behavior (%) [*] Among MSM	Prevalence of MSM Engaging in This Behavior Who Thought that Their Risk of HIV Infection Was Not High
UA ^{**}	UO ^{***}		
YES	YES	31.0	65.4
YES	NO	15.2	75.6
NO	YES	20.2	78.8
NO	NO	28.7	81.6

* .9% of the men did not fully answer these questions

** UA = unprotected anal intercourse in any venue in the 2 months prior to bathhouse testing

*** UO = unprotected oral intercourse in any venue in the 2 months prior to bathhouse testing

Table 3

**MULTIVARIATE CORRELATES OF UNPROTECTED ANAL SEX AMONG MSM ACCESSING
SEXUAL HEALTH TESTING SERVICES IN A NEW ENGLAND BATHHOUSE**

Variable	Adjusted OR (95% CI)
Age Category 18-30 (Referent) Older age	0.98 (0.80- 1.21)
Perceived HIV Risk Low (Referent) High	1.41 (0.83- 2.40)
Race White (Referent) Other	0.53 (0.28- 1.02)
>5 partners in the past year	0.88 (0.50- 1.56)
Sex with someone who is HIV+	1.98 (1.15- 3.41)
Unprotected sex while on drugs *	3.49 (1.71- 7.13)
Found sex partners via internet	2.12 (1.32- 3.41)
In a relationship with man I love and sometimes have sex here with other men	5.51 (1.94- 15.60)

* In the previous two months, not necessarily in a bathhouse setting

Table 4

MULTIVARIATE CORRELATES OF HIV/SYPHILIS SEROPOSITIVITY AMONG MSM ACCESSING SEXUAL HEALTH TESTING SERVICES IN A NEW ENGLAND BATHHOUSE

Variable	Adjusted OR (95% CI)
Age Category 18-30 (Referent) Older age	1.66 (1.00- 2.77)
Unprotected anal sex	1.03 (0.32- 3.31)
Race White (Referent) Other	2.28 (0.63- 8.28)
>5 partners in the past year	0.99 (0.22- 4.51)
Sex with someone who is HIV+	4.35 (1.38- 13.78)
Previous STD diagnosis (past 12 months)	4.56 (1.45- 14.39)
Found sex partners via internet	3.70 (1.14- 11.94)
Found sex partners via bathhouse	0.19 (0.06- 0.63)