

Differential HIV Risk in Bathhouses and Public Cruising Areas

Diane Binson, PhD, William J. Woods, PhD, Lance Pollack, PhD, Jay Paul, PhD, Ron Stall, PhD, MPH, and Joseph A. Catania, PhD

Since Humphreys' groundbreaking study¹ of sex between men in "tearooms" (public restrooms with a reputation as a place where homosexual encounters occur), social scientists have investigated the environments outside the home where men who have sex with men (MSM) meet other MSM for casual, usually anonymous, sex. The variety of settings is large, but they generally allow participants to secure a minimum of privacy, at least in terms of not being harassed or interrupted.² Some of the venues are purely public spaces (e.g., parks, beaches, alleys, and toilets), and some are commercial environments that can also serve as sex venues (e.g., adult bookstores, pornographic movie houses, back rooms of bars, and traditional Turkish or Japanese bathhouses). The general purpose of all these venues is (or purports to be) something other than providing opportunities for sex. Consequently, MSM who frequent these venues share them with people who are not seeking sexual encounters on the premises, and MSM take certain risks in looking for sexual encounters, including risk of discovery, physical harm, or arrest. Certain other commercial venues exist primarily to provide an opportunity for MSM to have sex with other MSM. These are usually called gay bathhouses (or baths), although they go by other names (e.g., sex clubs, tubs, saunas, and health clubs).³ Generally speaking, gay baths provide relative physical safety for patrons (although police harassment of bathhouse and sex club patrons occurs, it has been relatively rare).^{2,4}

Because the association between HIV and baths was identified early in the epidemic,⁵⁻¹¹ investigators have given considerable attention to sex venues generally. Their studies were of 2 types: men leaving a selected venue (e.g., tearooms¹²) were surveyed about their recent sexual risk behaviors, or samples of gay men were asked both about their sexual risk behavior and whether they visited any sex venue.^{13,14} Results suggested that HIV risk behavior occurred in all types of sex venues and that men who went to these venues

Objectives. This report investigates differences in risk behaviors among men who have sex with men (MSM) who went to gay bathhouses, public cruising areas, or both.

Methods. We used a probability sample of MSM residing in 4 US cities (n = 2881).

Results. Men who used party drugs and had unprotected anal intercourse with nonprimary partners were more likely to go to sex venues than men who did not. Among attendees, MSM who went to public cruising areas only were least likely, and those who went to both public cruising areas and bathhouses were most likely to report risky sex in public settings.

Conclusions. Distinguishing between sex venues previously treated as a single construct revealed a significant association between pattern of venue use and sexual risk. Targeting HIV prevention in the bathhouses would reach the segment of men at greatest risk for HIV transmission. (*Am J Public Health.* 2001;91:1482-1486)

were more likely to report engaging in risk behavior than men who did not go to these venues. Curiously, none of these studies investigated differences in levels of risk between the different types of sex venues (e.g., public cruising areas vs baths) or differences between men who visited only 1 type of venue vs those who went to several types. Given earlier ethnographic research in sex venues, one might expect sexual behavior across venues to vary.^{1,15-19} However, no systematic risk behavior assessments across different types of venues have been conducted either before or since the onset of the HIV epidemic.

Using data from a probability sample of urban MSM, the present analysis describes the characteristics of men according to their pattern of sex venue attendance: whether they went only to public cruising areas, only to baths, or to both public cruising areas and baths.

METHODS

Sample

The data are from the Urban Men's Health Study, a telephone survey based on a probability sample of men 18 years or older who self-identified as gay or bisexual or who reported sexual contact with a man since 14 years of age. Detailed descriptions of the methods for this study are provided elsewhere.^{20,21} Briefly, the sample design used

multiple data sources to identify geographic areas in New York, Chicago, Los Angeles, and San Francisco that reflected residential clustering of MSM populations.²² Using disproportionate and adaptive sampling techniques, we then constructed a random-digit-dialed sample for the designated target areas within each city.^{23,24} With computer-assisted telephone interviewing, we conducted 2881 interviews with MSMs in English or Spanish (average time = 75 minutes), achieving a completion rate of 78%. We developed sample weights to reflect probability of selection, nonresponse, and noncoverage, while maintaining proportionality between cities based on the estimated size of each city's MSM population. All data in this report are weighted.

Measures

Interviews covered a range of social, psychological, and health-related topics, with an emphasis on HIV-related issues. HIV status was self-reported. Respondents were asked a series of questions related to frequenting specific sex venues in the past 12 months. First, men were asked how often they went to "a sex club or bathhouse," then how often they went to "a public cruising area," such as a park, beach, tearoom, or bookstore. They also were asked to describe their same-sex sexual practices for the past 12 months, including number of partners, number of "one-night stands," whether they engaged in unprotected anal intercourse, and whether such inter-

course occurred in group or in public settings or outside the confines of a primary relationship. To control for a major cofactor of HIV risk behavior, we included in this analysis usage of 4 drugs that tend to be associated with casual sex: *poppers* (i.e., nitrites), *ecstasy*, *methamphetamines*, and *other party drugs* (such as ketamine and rohypnol).

Statistical Analysis

For the analyses in this report, the sample was limited to men who reported having sex with a man in the past year ($n=2478$). Chi-square tests were used to evaluate the association between attending a sex venue (either baths or public cruising areas) in the past 12 months and various correlates, including demographic characteristics, HIV status, drug usage, and a gross index of HIV risk behavior. Among men who did attend a sex venue ($n=1331$), χ^2 tests were then employed to investigate differences between “cruisers,” “bathers,” and “multivenue users” on indices and indicators of risk behavior. Finally, we used logistic regression to examine the statistical relationship between the 2 primary independent variables (patterns of sex venue use—cruisers, bathers, and multivenue users—and frequency of attendance of sex venues) and unprotected anal intercourse in a public setting, while controlling for the effects of drug use and serostatus. Venue, frequency of venue attendance, and their interaction were entered in the equation first, followed by frequency of drug use and HIV serostatus. In the last step, all other 2-way interactions (except the venue-with-drug use interaction, which would have resulted in an empty cell) were given the chance to enter the model via a backward stepwise procedure. The final model achieved good fit as assessed by the Hosmer–Lemeshow goodness-of-fit test ($P=.48$). P values for χ^2 tests and standard errors of regression coefficients were adjusted for weighted data with the SVYTAB and SVYLOGIT procedures in STATA (Stata Corp, College Station, Tex).

RESULTS

Overall, about half of the MSM in our sample reported going to a sex venue (Table 1). Younger and less-educated men were more

TABLE 1—Percentage of Men Who Have Sex With Men (MSM) Who Frequent Sex Venues in the Last Year, by Demographic Characteristics, Drug Use, and Sexual Behavior: Urban Men's Health Study, 1997

	MSM Who Frequent Sex Venues	
	n	% (95% CI)
Total	2 478	54.6 (52.0, 57.1)
Age, y**		
18–25	185	66.4 (57.7, 74.1)
26–35	1 001	58.4 (54.2, 62.4)
36–45	786	51.6 (47.3, 56.0)
46–55	336	51.0 (44.6, 57.2)
≥56	159	38.2 (29.6, 47.7)
Education**		
High school	698	58.6 (54.0, 63.1)
College	1 152	56.4 (52.5, 60.2)
Master's/doctorate	622	46.6 (41.9, 51.4)
Race/ethnicity		
White	1 943	52.8 (49.9, 55.7)
African American	108	58.4 (47.6, 68.5)
Latino	246	61.8 (53.8, 69.3)
Asian/Pacific Islander	102	65.5 (52.8, 76.4)
Native American	60	54.8 (39.6, 69.1)
Domestic partnership status**		
Partnered	906	43.0 (38.6, 47.6)
Single	1 421	61.6 (58.6, 64.6)
City of residence		
San Francisco	554	53.2 (49.2, 57.2)
New York	1 104	56.5 (52.0, 60.9)
Los Angeles	612	53.0 (47.9, 58.0)
Chicago	204	52.8 (46.5, 59.0)
Serostatus*		
HIV positive	402	61.8 (55.6, 67.6)
HIV negative	1 906	52.8 (49.9, 55.8)
Used any of 4 party drugs ³ **		
Used drugs	771	72.1 (68.0, 75.9)
Did not use drugs	1 528	45.9 (42.8, 49.1)
UAI with nonprimary partner**		
Had UAI	608	76.3 (71.9, 80.2)
Did not have UAI	1 824	47.8 (44.9, 50.8)

Note. CI = confidence interval; UAI = unprotected anal intercourse.

³Poppers, ecstasy, methamphetamines, and other party drugs such as ketamine and rohypnol.

* $P < .01$; ** $P < .001$.

likely to visit a sex venue. Men of color generally reported attending these venues more than did Whites. However, most of the men in any given venue may not be men of color, since the number of these men in the target population is less than that of White MSM. Partnered men were less likely to go to these

sex venues; nevertheless, a substantial proportion reported attending. Men who reported use of any 1 of the 4 party drugs and unprotected anal intercourse with a nonprimary partner were more likely to visit these sex venues than were men who did not report these behaviors.

Of all the men going to sex venues, 75% went to public cruising areas and 61% to baths. We found that 39% of men who went to sex venues went only to public cruising areas (cruisers), 25% went only to baths (bathers), and 36% went to both types of venues (multivenue users). The demographic characteristics of the men were similar across the 3 possible patterns of venue use, although men younger than 26 years and men older than 55 were more likely to be cruisers (50% and 57%, respectively) than were men in their mid-20s to mid-50s (33%–46%).

Bathers and multivenue users were more likely than cruisers to be HIV positive, to have had sexually transmitted diseases, and to report using poppers, ecstasy, methamphetamines, and other party drugs (Table 2). Multivenue users were most likely to report risky behavior, and cruisers were least likely. Half of multivenue users reported unprotected anal intercourse with a nonprimary partner in the past year, compared with 20% of cruisers and 34% of bathers. In addition, multivenue users were more likely than bathers or cruisers to report engaging in unprotected anal intercourse in a public setting and engaging in group sex.

The multivariate analysis (Table 3) indicated that bathers and multivenue users were significantly more likely to engage in unprotected anal intercourse in a public setting than were cruisers and that frequent venue attendees were more likely to have such intercourse in public than less frequent attendees. The interaction between pattern of venue use and frequency of venue use was not significant and therefore was not retained in the final model. The model also indicated that respondents who reported frequent drug use, as well as those who were HIV positive, were more likely to engage in unprotected anal intercourse in a public setting. None of the other interactions tested achieved statistical significance.

DISCUSSION

The results suggest that sex venues play an important role in the sexual lives of gay men. However, it was encouraging to learn that most of those visiting sex venues did not

TABLE 2—Prevalence of Sexually Transmitted Diseases (STDs), Drug Use, and Risky Sexual Practices Among Men Who Frequent Gay Sex Venues, by Venue Use: Urban Men's Health Study, 1997

	Cruisers, % (n = 515)	Bathers, % (n = 326)	Multivenue Users, % (n = 481)
STDs			
HIV positive ^b	13.1	21.2	24.9
Ever had an STD ^c	49.5	61.3	58.2
Drug use in last 6 months			
Poppers ^b	17.8	38.2	43.3
Ecstasy ^b	10.0	20.2	23.2
Methamphetamines ^b	8.2	16.5	22.2
Other party drugs ^b	4.4	19.2	19.5
Any of the 4 drugs ^b	27.4	49.1	58.7
Sexual practices			
UAI with nonprimary partner ^d	20.0	33.9	50.4
UAI in public setting ^d	4.3	10.1	21.6
Group sex ^d	25.3	51.6	69.9
UAI in group setting ^b	2.3	9.1	14.5
No. of partners			
≥26 partners in last year ^{a,d}	8.1	14.8	33.2
≥21 one-night stands in last year ^{a,d}	5.7	12.3	30.7

Note. Given a significant ($P < .05$) χ^2 for the behavior-by-venue use analysis, post hoc analyses were performed. The 3 possible pairwise comparisons for venue use (cruisers vs bathers, cruisers vs multivenue users, and bathers vs multivenue users) were evaluated by employing a Bonferroni solution to limit type I error. Consequently, "significance" is achieved by $P < .0167$. UAI = unprotected anal intercourse.

^aNumber of partners (mode = 1, median = 8, mean = 19.9) and number of one-night stands (mode = 0, median = 4, mean = 14.9) have severely skewed distributions. For purposes of descriptive analysis, these 2 distributions were divided into roughly equal-sized categories (partners: 1–2 [20%], 3–5 [21%], 6–10 [19%], 11–25 [21%], ≥26 [19%]; one-night stands: 0 [20%], 1–2 [18%], 3–5 [18%], 6–10 [14%], 11–20 [14%], ≥21 [16%]). Prevalence of the highest category is reported to illustrate the relationship with venue use.

^bThere were significant proportional differences ($P < .0167$) between cruisers and bathers and between cruisers and multivenue users, but no significant proportional difference between bathers and multivenue users.

^cOnly the difference between cruisers and bathers was significant ($P < .0167$). The difference between cruisers and multivenue users was near significance (.0167 $< P < .04$), whereas the difference between bathers and multivenue users was clearly not significant ($P > .40$).

^dThere were significant proportional differences ($P < .0167$) between all combinations of categories (i.e., cruisers and bathers, cruisers and multivenue users, and bathers and multivenue users).

engage in sexual risk behaviors. Nevertheless, because our measures assessed risk behavior, the data emphasized the minority of men who engaged in risky behavior in these venues.

Findings associated with serostatus and sexual risk behavior indicated that HIV-positive men remain sexually active, seek sexual partners in the same settings as uninfected men, and are more likely to engage in unprotected anal intercourse in a public setting. However, since we do not know the serostatus of their partners, it may be that HIV-positive men engaged in risky sexual practices with other HIV-positive men.²⁵ Although the issue of re-

infection has yet to be resolved, seroconcordant HIV-positive sex partners have reason to avoid risks for other sexually transmitted diseases.

The most striking finding was a consistent pattern across all drug- and sex-related risk behavior: multivenue users were the most likely to report risky behavior and cruisers were the least likely. These data tell a story that would have been lost had the dichotomous "sex venues" variable been treated as a single construct, "public sex environments." We uncovered a significant association between individual characteristics, venue type, and risk behavior. The results showed that

TABLE 3—Relationship Between Characteristics of Men Who Frequent Gay Sex Venues and Engage in Unprotected Anal Intercourse in a Public Setting: Urban Men's Health Study, 1997

	OR (95% CI)
Venue use patterns	
Cruisers	1.00
Bathers	2.37 ^a (1.14, 4.93)
Multivenue users	3.91 ^a (1.98, 7.72)
Frequency of venue use in last year	
1–12 times	1.00
≥13 times	1.86 ^a (1.03, 3.33)
Frequency of drug use in last 6 months	
None	1.00
1–24 times	1.10 (0.61, 1.97)
≥25 times	2.83 ^a (1.35, 5.92)
Serostatus	
Negative	1.00
Positive	1.89 ^a (1.09, 3.25)

Note. OR = odds ratio; CI = confidence interval. Multivenue users did not significantly differ from bathers in likelihood of engaging in sexual risk behavior (OR = 1.65; 95% CI = 0.84, 3.25). However, men who used drugs more frequently (≥25 times in the last 6 months) were more likely than those who used them less often (1–24 times) to engage in sexual risk behavior (OR = 2.58; 95% CI = 1.20, 5.55).

^aOR significantly different from 1.

sexual risk behavior was related to venue, with baths being the more likely place where it occurred. Baths played a central role in the early spread of HIV,⁵ and some have suggested that the bathhouse environment is inherently unsafe.^{6,26,27} However, our data indicated that the risk behaviors of those who go to baths were complex. Although HIV transmission may be more likely in baths than in public cruising areas, most men who went to baths did not report engaging in activity that would lead to transmission. This suggests that the interaction between the individual and the environment is a more likely explanation for sexual risk behavior than explanations based solely on the individual.

Comprehensive prevention efforts need to address the individual, the environment, and their interaction. We know that baths are places where prevention efforts can actually find a majority of the men who have risky sex, and they are places where sex occurs, sometimes unprotected sex. This fact is particularly noteworthy, given that HIV prevention programs have not successfully reached men at highest risk for HIV transmission.²⁸ Further, HIV interventions proximate to sexual activity probably have the best chance of

being successful. Conducting HIV prevention in baths would reach bathers, but also the men who report the most risky behavior, multivenue users.

Although we know that many US baths distribute condoms, lubrication, and HIV information, and a few provide counselors and special events related to safer-sex skills building,³ there is no evidence of the efficacy of these interventions. More important, we need to begin to investigate how manipulating the physical structure of the environment can successfully advance safe behavior. Although the data suggest an interaction between the environment and the individual, they are not sufficient to identify the particular characteristics that contribute to the interaction. Until these are identified, we cannot develop, implement, or test those prevention efforts that are most likely to be effective in reducing HIV transmission among MSM. Thus, although prevention programs that address the individual need to continue, the challenge in the next generation of prevention efforts is to unravel the complex interaction between individual characteristics and the environment. Given the recently reported increases in risk behav-

ior²⁹ and in sexually transmitted diseases among gay men,³⁰ it is a challenge we cannot ignore. ■

About the Authors

The authors are with the Center for AIDS Prevention Studies, University of California, San Francisco.

Requests for reprints should be sent to Diane Binson, PhD, UCSF-CAPS, 74 New Montgomery St, Suite 600, San Francisco, CA 94105 (e-mail: dbinson@psg.ucsf.edu).

This article was accepted November 6, 2000.

Contributors

D. Binson helped design the original project and instrument, led in conceiving the original study question, proposed and interpreted the analysis, and wrote the paper. W.J. Woods participated in the conception and design of the paper, contributed to the interpretation, wrote sections of the paper, and assisted in revising the paper. L. Pollack conducted the analyses, participated in interpretation, and reviewed drafts of the paper. J. Paul contributed to the original conception of the study and to the design of the data collection instrument, and reviewed drafts of the paper. R. Stall, as co-principal investigator, designed the original project and reviewed drafts of the paper. J.A. Catania, as principal investigator, designed the original project, designed the instrument, and reviewed drafts of the paper.

Acknowledgments

Primary support for this study was provided by National Institute of Mental Health grant MH54320.

This study would not have been possible without the extensive cooperation of the men who were willing to serve as project participants, the dedication of interviewers who were able to secure participants' cooperation, and the project staff of Survey Methods Group of San Francisco. The random-digit-dialed sample frame was constructed by Johnny Blair and Tim Tripplett at the Survey Research Center of the University of Maryland, in collaboration with Dr Graham Kalton at Westat. Dr Judith Moskowitz's creativity in mapping the cities and seeing the project through the multiple pretests and Dr Thomas Mills's knowledge and expertise in the design and implementation of the initial fieldwork were key contributions to the success of this study. Melissa Adelson, Liz Garrity, and Eva Coyle were always willing and able to provide whatever administrative support was needed.

The procedures for involvement of human participants and their informed consent were reviewed and approved by the Committee for Human Research, University of California San Francisco.

References

- Humphreys L. *Tearoom Trade: Impersonal Sex in Public Places*. Hawthorne, NY: Aldine de Gruyter; 1970.
- Chauncey G. *Gay New York: Gender, Urban Culture, and the Making of the Gay Male World 1890–1940*. New York, NY: Basic Books; 1994.
- Woods WJ, Binson D, Mayne TJ, Gore R, Rebchook G. HIV/STD education and prevention in US bathhouse and sex club environments. *AIDS*. 2000;14:625–626.
- Berube A. The history of gay bathhouses. In:

- Colter EG, Hoffman W, Pendleton E, Redick A, Serlin D, eds. *Policing Public Sex*. Boston, Mass: South End Press; 1996:187–220.
5. Turner CF, Miller HG, Moses LE, eds. *AIDS: Sexual Behavior and Intravenous Drug Use*. Washington, DC: National Academy Press; 1989.
 6. Bayer R. *Private Acts, Social Consequences: AIDS and the Politics of Public Health*. New Brunswick, NJ: Rutgers University Press; 1989.
 7. McKusick L, Wiley JA, Coates TJ, et al. Reported changes in the sexual behavior of men at risk for AIDS, San Francisco, 1982–84—the AIDS Behavioral Research Project. *Public Health Rep*. 1985;100:622–629.
 8. McKusick L, Horstman W, Coates TJ. AIDS and sexual behavior reported by gay men in San Francisco. *Am J Public Health*. 1985;75:493–496.
 9. Martin JL. AIDS risk reduction recommendations and sexual behavior patterns among gay men: a multifactorial categorical approach to assessing change. *Health Educ Q*. 1986;13:347–358.
 10. Martin JL. The impact of AIDS on gay male sexual behavior patterns in New York City. *Am J Public Health*. 1987;77:578–581.
 11. de Wit JB, de Vroome EM, Sandfort TG, van Griensven GJ. Homosexual encounters in different venues. *Int J STD AIDS*. 1997;8:130–134.
 12. Church J, Green J, Vearnals S, Keogh P. Investigation of motivational and behavioural factors influencing men who have sex with other men in public toilets (cottaging). *AIDS Care*. 1993;5:337–346.
 13. Bolton R, Vincke J, Mak R. Gay saunas: venues of HIV transmission or AIDS prevention? *Natl AIDS Bull*. 1992;9:22–26.
 14. Coates TJ, Acree M, Stall R, et al. Men who have sex with men in public places are more likely to have unprotected anal intercourse. Paper presented at: XI International Conference on AIDS; July 7–12, 1996; Vancouver, British Columbia.
 15. Weinberg MS, Williams CJ. Gay baths and the social organization of impersonal sex. *Soc Problems*. 1975;23:124–136.
 16. Styles J. Outsider/insider: researching gay baths. *Urban Life*. 1979;8:135–152.
 17. Delph EW. *The Silent Community: Public Homosexual Encounters*. Beverly Hills, Calif: Sage; 1978.
 18. Rumaker M. *A Day and a Night at the Baths*. San Francisco, Calif: Grey Fox Press; 1979.
 19. Brodsky JI. The Mineshaft: a retrospective ethnography. In: De Cecco JP, Elia JP, eds. *If You Seduce a Straight Person, Can You Make Them Gay? Issues in Biological Essentialism Versus Social Constructionism in Gay And Lesbian Identities*. New York, NY: Haworth Press; 1993:233–251.
 20. Catania JA, Osmond D, Stall RD, et al. The continuing HIV epidemic among men who have sex with men. *Am J Public Health*. 2001;91:907–914.
 21. Stall R, Pollack L, Mills TC, et al. Use of antiretroviral therapies among HIV-infected men who have sex with men: a household-based sample of 4 major American cities. *Am J Public Health*. 2001;91:767–773.
 22. Binson D, Moskowitz J, Mills T, et al. Sampling men who have sex with men: strategies for a telephone survey in urban areas in the United States. *Proc Am Stat Assoc*. 1996;1:68–72.
 23. Kalton G. Sampling considerations in research on HIV risk and illness. In: Ostrow DG, Kessler RC, eds. *Methodological Issues in AIDS Behavioral Research*. New York, NY: Plenum Press; 1993:53–74.
 24. Blair J. A probability sample of gay urban males: the use of two-phase adaptive sampling. *J Sex Res*. 1999;36:39–44.
 25. Wolitski R, Gomez CA, Parsons JT, Ambrose T, Remien RH. HIV-seropositive men's perceived responsibility for preventing the transmission of HIV to others. In: Program and abstracts of the 12th World AIDS Conference; June 28–July 3 1998; Geneva, Switzerland. Abstract 23361.
 26. Shilts RM. *And the Band Played On: Politics, People, and the AIDS Epidemic*. New York, NY: St Martin's; 1987.
 27. Rotello G. *Sexual Ecology: AIDS and the Destiny of Gay Men*. New York, NY: Penguin Putnam; 1997.
 28. Hoff C, Kegeles S, Acree M, et al. Looking for men in all the wrong places: HIV prevention small-group programs do not reach high risk gay men. *AIDS*. 1997;11:829–831.
 29. Marquis J. Syphilis cases double among gays. *Los Angeles Times*. April 8, 2000;Metro section.
 30. Ekstrand ML, Stall RD, Paul JP, Osmond DH, Coates TJ. Gay men report high rates of unprotected anal sex with partners of unknown or discordant HIV status. *AIDS*. 1999;13:1525–1533.