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HIV Transmission Risk at a Gay Bathhouse

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Abstract

Previous research found up to 14% of men who go to bathhouses engage in unprotected anal intercourse (UAI) and tend to have multiple sexual partners during their bathhouse visit, thus appearing to support concerns that such venues could foster acute outbreaks of new HIV infections. We conducted a two-stage probability sample of men exiting a gay bathhouse and focused our analysis on whether the partnering patterns of the men who engaged in UAI present such a risk. Among patrons who had oral or anal sex during their visit ($n=758$), 16.7% were HIV-positive and 13.9% engaged in UAI. Although men had multiple sex partners during a visit, they had UAI with only one of those partners on average, and withdrawal prior to ejaculation occurred in the vast majority of UAI incidences. Thus, the risk of sexual transmission of HIV during the bathhouse visit was typically within isolated dyads rather than patterns of multiple sexual encounters that might put many men at risk during a single visit, and men who did engage in UAI tended to withdraw prior to ejaculation, potentially mitigating the risk of HIV transmission.

Keywords

gay bathhouse; gay men; HIV prevention; HIV risk behavior

Introduction

The disproportionate prevalence of HIV/AIDS among men who have sex with men (MSM) continues to be a major public health emergency in the United States and many other parts of the world (CDC, 2009; UNAIDS, 2008). MSM represent approximately 5% of the US male population (Binson, Michaels, Stall, & Coates, 1995; Fay, Turner, Klassen, & Gagnon, 1989; Laumann, Gagnon, Michael, & Michaels, 1994; Rogers & Turner, 1991), yet account for over 50% of the epidemic among men (CDC, 2009). A recent editorial in the *Journal of the American Medical Association* reported on data that indicated a reemerging HIV/AIDS epidemic among MSM (Jaffe, Valdiserri, & DeCock, 2007). The number of cases in this population has

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increased 13 percent from 2001 to 2005 and there is evidence in sexually transmitted disease data that there also has been an increase in frequency of unprotected sex (Jaffe et al., 2007; Osmond, Pollack, Paul, & Catania, 2007). Research has indicated that unprotected receptive anal sex with HIV-positive partners and with casual partners regardless of serostatus was associated with seroconversion (Weber et al., 2003).

Earlier research on adult MSM living in urban centers of the U.S. found that men who engage in unprotected anal intercourse (UAI) are significantly more likely to visit public sex environments (e.g., sex clubs, bathhouses, and cruising areas) than MSM who do not engage in UAI (Binson, Woods, Pollack, Paul, Stall, & Catania, 2001). However, multiple studies suggest that high risk sexual behavior is not that common inside the bathhouse, (Bingham, Secura, Behel, Bunch, Simon, & MacKellar, 2008; de Wit, de Vroome, Sandfort, & van Griensven, 1997; Ko, Lee, Chang, Lee, Chang, & Lee, 2006; Reidy, Spielberg, Wood, Binson, Woods, & Goldbaum, 2009; Richwald, Morisky, Kyle, & Kristal, 1988; Van Beneden, Modesitt, O'Brien, Yusem, Rose, & Fleming, 2002; Woods, Binson, Blair, Han, Spielberg, & Pollack, 2007). Recent studies using probability samples (Bingham et al., 2008; Reidy et al, 2009; Woods et al., 2007) have found that a range of 7% to 14% of men visiting bathhouses engaged in UAI during their bathhouse visit; a correlate of UAI at the bathhouse was having a greater number of sex partners during that visit (Bingham et al., 2008; Woods et al., 2007). Since numbers of partners potentially increases the opportunity to transmit diseases efficiently (Laumann & Youm, 1999), especially when there is rapid turnover of partners, the extent to which men are having UAI with multiple partners in a given visit might greatly increase the spread of HIV (Bayer, 1991; Bolton, Vincke, & Mak, 1992; Disman, 2003; Farley, 2002; Wohlfeiler & Potterat, 2005; Wohlfeiler, Teret, Woodruff, & Marcus, 2007).

To better understand risk in these environments necessitates collecting data from a representative sample of bathhouse patrons. The anonymous nature of the bathhouse enterprise precludes obtaining a list of patrons. Consequently, some researchers have utilized time-space sampling of men as they are leaving the bathhouse (Binson, Blair, Huebner, & Woods, 2007). Implementing such a design can be costly because it often requires extensive observation (needed to inform the sampling frame and methodology), long periods of data collection, and extra staffing because enumeration of the population from which the sample is drawn (men exiting a bathhouse) must occur contemporaneously with data collection. The data collection process itself presents its own issues. For example, being asked to report on activities in the bathhouse may be information that some men may consider as sensitive or socially undesirable, or entailing possible societal risks should their activity become known. Moreover, men often are in a hurry and not amenable to an interruption during their exit, let alone a request to stay a few minutes longer in order to complete a survey interview that, because of logistical constraints, must be limited in length and scope. For these reasons, drawing a probability sample of men exiting a bathhouse is difficult, which perhaps is why there have been only three studies ever published using this design.

Having collected these data provides an opportunity to investigate the patterns of risk men engage in when they have UAI at the bathhouse by investigating the linkages between a given person and his sexual partners (Friedman & Aral, 2001; Morris, Zavisca, & Dean, 1995; Service & Blower, 1995). Our overarching aim is to provide a better understanding of the extent to which risk behavior in a bathhouse setting may contribute to an acute outbreak of new HIV infections. In order for rapid, widespread transmission of HIV to occur in a bathhouse setting a non-zero proportion of patrons must be HIV-positive, patrons must report multiple sex partners, and patrons' sexual behavior patterns during the visit must create potential transmission networks either directly (HIV-positive men reporting multiple insertive UAI partners) or indirectly (patrons reporting multiple receptive UAI partners which would expose succeeding receptive UAI partners to the semen of preceding receptive UAI partners). Using

two comparable exit survey samples from a single bathhouse, we examined data to determine if the conditions for potential widespread transmission of HIV were present inside the bathhouse.

Method

Sample

The participants were a sample of men ($n=852$) leaving a northern California gay bathhouse over two 5-week data collection periods separated by 1 year (the second data collection period was used to evaluate an on-site HIV testing program). A two-stage, time probability, cluster sample design was used. In the first stage, each day of the week was divided into eight 3-hour recruitment shifts (the bathhouse operated 24 hours a day, seven days a week) and a sample of shifts was selected; in the second stage, patrons exiting the establishment during those shifts were sampled. The shifts were selected with probabilities proportional to the expected number of exiting patrons. During each sampled shift, exiting patrons were selected with equal probabilities. The sample of exiting patrons used a random start number and a designated sampling interval (i.e., every n^{th} man exiting was selected for the sample) designed to result in six completed interviews per shift, i.e., the sampling fraction was set based on the expected number of visitors. The two stages taken together produced an equal probability sample of visits. The sample of visits was then weighted to convert it to a sample of individual visitors. However, patrons who visited the club more often during the data collection period had a proportionately higher chance of selection. This means that, as a group, frequent visitors would be over-represented unless corrective actions were taken. In the survey interview, each respondent was asked how many times he had visited (and planned to visit) the club during the data collection period. This information was incorporated into the construction of weights that, when implemented, converts the sample of visits into a sample of individual patrons that can be treated, for estimation purposes, as if they were selected with equal probabilities (a more detailed description of this design is provided in Binson et al., 2007).

The first data collection period spanned the last 36 consecutive days of 2001, which defines 288 possible 3-hour recruitment shifts. From these 288 shifts, a stratified (by expected number of visitors) random sample of 97 (33.7%) were selected for data collection. Between 1 and 4 shifts were selected for data collection for each of the 36 days. Fifteen shifts were selected for data collection during the first Monday-Sunday week, 18 in the second week, and 20 in each of the third, fourth, and fifth weeks (plus 4 shifts on the “extra” 36th day). The second data collection period occurred during the last 30 consecutive days of 2002 and the first 6 consecutive days of 2003. Once again this time period defined 288 3-hour recruitment shifts of which 90 (31.3%) were randomly selected for data collection, with between 1 and 4 shifts selected for data collection for each of the 36 days. Seventeen shifts were selected for data collection during the first Monday-Sunday week, 17 in the second week, 18 in the third week, 17 in the fourth week, and 18 in the fifth week (plus 3 shifts on the “extra” 36th day).

Recruitment and Data Collection

Three-man teams were assigned to each randomly selected shift, one man served as counter and the other two were available for recruiting and interviewing each n^{th} man checking out of the club. A selected man was considered eligible to be interviewed unless he had already participated in the study or was unable to give consent due to insufficient knowledge of English or cognitive impairment (e.g., due to recent alcohol or drug use). After recruitment, men were taken to a private room in the club, and, after giving verbal consent to participate, completed an interviewer-administered questionnaire. Participation was voluntary, anonymous, and reimbursed. All procedures and measures were reviewed and approved by the Institutional Review Board of the University of California, San Francisco.

Measures

The interviewer marked the interview start time and then asked the respondent what time he arrived at the bathhouse on that particular visit. Then the interviewer explained a definition of sex for purposes of the study. The respondent was told that sex questions would be specifically about anal and oral sex only, and that he should consider any penis-to-anus or penis-to-mouth contact as “sex,” no matter how brief or long it lasted and whether or not he or his partner reached orgasm (this definition was repeated throughout the section on sex). After first discussing this definition, he was asked about the number of men he had “sex” with during his just-completed visit to the bathhouse. Using a separate series of questions for receptive and insertive anal intercourse, respondents were asked the number of men they had that type of anal intercourse with. They were then asked how many of those partners they always used a condom with during anal intercourse, and the number with whom they did *not* always use condoms. Some of the sexual behavior questions used a permission-giving approach in question wording (Catania, Binson, Hauck, & Canchola, 1996). The question related to condom use acknowledged that men do not always use condoms during anal sex; for example: *“Sometimes men use condoms when they have anal sex, and other times they don't. Of these (use number in prior question) men you had insertive anal sex with, how many did you use a condom with during the whole time you were inside them?”* Concerning the partners with whom they did not always use condoms (either receptive or insertive), respondents were asked with how many there was withdrawal prior to ejaculation, and with how many there was ejaculation inside the receptive partner. A subsequent series of questions asked separately about performing and receiving oral sex. Respondents were asked for the number of men they had each type of oral sex with, and then with how many there was ejaculation inside the performing partner's mouth without using a condom.

A later section of the survey asked the respondent where he had sex in the last 3 months, specifically, his own or someone else's home, a bathhouse/sex club, a cruising area (like a park, beach, or adult bookstore), and other places he specified. For each place he had sex, we followed up with two questions: whether he had insertive anal sex without a condom and whether he had receptive anal sex without a condom.

Respondents were also asked if they had tested for HIV and the result of their most recent test. Finally, the respondent provided basic demographic information, including home zip code (first 3 digits) or city of residency, age, highest level of education attained, race/ethnicity, income, current work status, his identity relating to sexuality (responses offered were gay, queer, bisexual, homosexual, heterosexual, straight, or something else; and if something else was selected, respondents were asked to specify), whether he had a domestic partner (if so, whether partnership was registered), and his legal marital status. Then the interviewer marked the interview end time.

Statistical Analysis

All data were weighted for statistical analysis unless otherwise specified. It was not possible to weight the data to adjust for demographic variables, such as age or education, because such data were not available for the total patron population. The probability weight was the multiplicative product of three weighting components: 1) a base weight, which is the inverse of the probability of a visit being selected (the probability of a 3-hour shift being chosen multiplied by the respondent's probability of selection within the selected 3-hour shift), 2) a multiplicity weight, which is the inverse of the respondent's number of visits to the club during the data collection period (based on responses to survey questions on number of previous and subsequent planned visits to the venue during the 5-week data collection period), and 3) a non-response/non-coverage weight, which adjusted for failing to meet or exceeding the expected number of completed interviews for a selected shift. The total weight for a case is the product

of these three weights, which taken together provide (under certain standard assumptions) unbiased sample estimation.

All statistical analyses employed computational algorithms that correctly adjusted standard errors for weighted data. Differences between patrons sampled in 2001 and patrons sampled in 2002 were evaluated by an F test yielded by a Rao and Scott second-order correction of the Pearson chi-square statistic as calculated by the SVY: TABULATE procedure for two-way tabulations in Stata (Release 10). Proportions of respondents who were HIV-positive or who engaged in specific sexual behaviors during the bathhouse visit, and their associated 95% confidence intervals, were computed using the SVY: TABULATE procedure for one-way tabulations. HIV serostatus group differences in mean number of sexual partners were assessed using negative binomial regression via the SVY: NBREG procedure (regressing number of partners on serostatus).

Results

During the two data collection periods, 1,547 patrons exiting the bathhouse were selected for participation. Of these 98 were ineligible (65 previously interviewed, 21 cognitively impaired, 12 non-English speaking) and 21 could not be interviewed due to technical problems. Of the remaining 1,428 eligible patrons, 852 (59.7%) participated in the survey (62.1% in 2001, 57.2% in 2002). Comparisons between 2001 and 2002 study participants found no significant differences ($p > 0.05$) on age, education, HIV serostatus, sexual behavior during the visit, or sexual behavior during the 3 months prior to the visit. However, a significantly higher proportion of 2002 participants than 2001 participants were Hispanic (16.8% vs. 8.0%).

The average visit length was 3.8 hours (median = 3.1 hours, mode = 1.4 hours, range = 20 minutes to 17.5 hours). Of the 852 men surveyed, 758 (88.9%) engaged in oral or anal sex while at the bathhouse (8.8% engaged in some other form of sexual behavior, and 2.2% did not have sex of any kind during their visit). All subsequent analyses were restricted to this subsample of 758 sexually active patrons.

Sample Characteristics

Table 1 provides information on the demographic characteristics and recent (3 month) sexual behavior of the sexually active men exiting the bathhouse. A majority of the patrons were college-educated white men between 30 and 49 years of age with annual incomes exceeding \$40,000 a year who resided in the surrounding metropolitan area. Most thought of themselves as gay, queer or homosexual and were neither married nor in a domestic partnership. Approximately 94% of the sample had been sexually active in the 3 months prior to the visit, the majority with more than one sex partner. About half had multiple anal sex partners during that time and about a third reported UAI. A sizable minority (16.7%) self-reported as being HIV-positive. The rest were considered non-positive (i.e., not HIV-positive) since the group would include last tested HIV-negative men (75.5%) as well as men who never tested (6.0%) and men who tested but did not know their test results (1.8%).

Number of Partners during Bathhouse Visit

Of the 758 sexually active men surveyed, 744 (98.2%) engaged in oral sex and 404 (53.4%) engaged in anal intercourse. The average number of sexual partners during the bathhouse visit was 3.8 (median = 3.0, mode = 1.0, range = 1-30). The 744 men who had oral sex during their visit reported performing oral sex on an average of 1.8 men (median = 1.0, mode = 0.0, range = 0-30) while the average number of partners they received oral sex from was 2.3 (median = 2.0, mode = 1.0, range = 0-20). Among the 404 men who had anal sex during their visit, the average number of insertive anal sexual partners (whether or not a condom was used) was 0.6

(median = 0.0, mode = 0.0, range = 0-15) while the average number of receptive anal sex partners (whether or not a condom was used) was 0.4 (median = 0.0, mode = 0.0, range = 0-12).

Table 2 reports the numbers of partners for each type of sexual behavior among HIV-positive and non-positive respondents. HIV-positive men had more anal and oral sex partners than did their non-positive counterparts, regardless of whether the respondent was the insertive or receptive partner. HIV-positive respondents had significantly more oral sex partners but reported ejaculating into the mouths of their partners significantly fewer times.

Further, Table 2 shows that HIV-positive men reported more partners with whom they had either insertive or receptive anal sex than did non-positive men, although both groups had a mean of less than 1 partner for each behavior. HIV-positive men also reported significantly more partners for both insertive UAI and receptive UAI than non-positives. Once again, both groups had mean numbers of partners <1 for each behavior.

Prevalence and Patterns of UAI

Overall, 13.9% (95% CI 11.1 – 17.2) reported engaging in unprotected anal intercourse (UAI) with 9.7% (95% CI 7.4 – 12.7) reporting insertive UAI and 6.4% (95% CI 4.6 – 8.9) reporting receptive UAI. Previous multivariate analysis of the 2001 sample had already identified serostatus (HIV-positive vs. non-positive OR=7.61, 95% CI 2.88 – 20.08) and a greater number of partners during the bathhouse visit (3+ vs. 1-2 OR=8.38, 95% CI 2.46 – 28.61) as the most powerful correlates of having UAI during the visit (Woods et al., 2007)¹. However, in order to determine whether these conditions could have resulted in an acute outbreak of new HIV infections, it was necessary to review individual cases for their patterns of partnering when engaging in either insertive UAI or receptive UAI. As such, individual cases are unweighted.

Among 93 HIV-positive men who engaged in anal intercourse at the bathhouse, 69 had insertive anal intercourse and of these men, 23 had insertive UAI: 20 always withdrew prior to ejaculation (18 men with 1 partner, 1 man with 2 partners, and 1 with 8 partners); the other 3 ejaculated inside their partner (2 men with 1 partner each, and 1 man with 2 partners).

Among these same 93 HIV-positive men who engaged in anal intercourse at the bathhouse, 60 had receptive anal intercourse and 25 had receptive UAI: 17 men only had partners who withdrew prior to ejaculation (13 with 1 partner, 3 with 2 partners, and 1 with 3 partners; 3 men who reported unprotected receptive anal intercourse (URAI) did not report details of ejaculation, each had 1 partner) and 5 had URAI to ejaculation (3 men with 1 partner each, 1 man with 3 partners, and 1 with 5 partners). Eight of the HIV-positive men who reported receptive UAI also reported insertive UAI.

Among the 306 non-positive men who engaged in anal intercourse at the bathhouse, 237 had insertive anal intercourse and 56 reported insertive UAI: 41 always withdrew prior to ejaculation (37 with 1 partner, 3 with 2 partners, and 1 with 3 partners) and 12 had insertive UAI to ejaculation (11 men with 1 partner each, and 1 with 2 partners). Three men who reported insertive UAI did not report details of ejaculation; 1 had 5 partners and 2 had 1 partner each.

Among these same 306 non-positive men who engaged in anal intercourse, 130 engaged in receptive anal intercourse and 25 had receptive UAI: 20 only had partners who withdrew prior to ejaculation (18 men with 1 partner and 2 with 2 partners; 1 man who reported receptive UAI

¹Other significant correlates included feeling the effects of any drugs (other than alcohol or marijuana) during the visit, having fewer sexual partners in the last 3 months (5 or fewer vs. 6 or more), engaging in UAI in the last 3 months, visiting other sex clubs/bathhouses in the past 12 months, having tested for an sexually transmitted disease in the past 12 months, and having a higher income (>\$100,000 vs. <\$40,000).

did not report details of ejaculation with his 1 partner) and 4 men had receptive UAI to ejaculation (2 men with 1 partner each and 2 with 2 partners). Six of the non-positive men who reported receptive UAI also reported insertive UAI.

Data in Table 3 show the proportion of men using withdrawal during insertive and receptive UAI by serostatus and number of partners. Regardless of their serostatus or whether they were in the insertive or receptive position, a majority of men reported that they (during insertive UAI) or their partners (during receptive UAI) withdrew prior to ejaculation (71% and 96%, respectively). There were no significant differences in engaging in withdrawal between participants who had one vs. more than one partner. For HIV-positive men withdrawal was slightly less likely during receptive UAI with more than 1 partner (compared to 1 partner), while for non-positive men withdrawal was slightly less likely during insertive UAI with more than 1 partner (compared to 1 partner).

Discussion

Prior data showing that a minority of gay bathhouse patrons engage in UAI in the bathhouse, and that same minority tended to report multiple sex partners while at the bathhouse (Bingham et al., 2008; Reidy et al., 2009; Woods et al., 2007), supported concerns that these venues represent a significant risk for acute outbreaks of new HIV infections among MSM (Bayer, 1991; Bolton et al., 1992; Disman, 2003; Wohlfeiler & Potterat, 2005; Wohlfeiler et al., 2007). However, past research has shed no light on whether partnering patterns inside the bathhouse presented conditions that would support rapid, widespread transmission of HIV. That possibility was not reflected in the data from this particular bathhouse.

The data confirm that HIV-positive men do visit the bathhouse and bathhouse patrons do engage in sex with multiple partners, but as was the case in previous studies, only 1 in 7 men who did engage in sex during the visit reported UAI. Moreover, their partnership pattern was primarily that of isolated dyads with the vast majority of men having UAI with only one partner. While UAI, especially in the context of anonymous sex inherent in the bathhouse environment, creates risk for HIV transmission, the dyadic partnering pattern precludes any rapid widespread transmission. Furthermore, even those who engage in UAI withdraw prior to ejaculation, which provides some limited measure of protection. The association of UAI with greater numbers of sexual partners may be explained by the need to search for a partner willing to have UAI. That is, since most men at the bathhouse did not have UAI, the men who did have UAI needed to identify each other, and therefore would have needed to initiate sex with more partners to identify someone willing to engage in UAI.

While the conditions for an acute HIV infection outbreak do not appear to be present in the bathhouse, the risk for HIV transmission is clearly evident. It is noteworthy that very few non-positive men engaged in receptive anal intercourse without a condom because this matches the belief held by many HIV-positive men that anyone in a bathhouse who engages in receptive UAI must be HIV-positive (Haubrich, Myers, Calzavara, Ryder, & Medved, 2004). The fact that most HIV-positive men did not engage in insertive UAI to the point of ejaculation might have reduced the risk to the occasional non-positive man who was the receptive partner in UAI. Although the majority of insertive UAI was performed by non-positive men, the safety of this behavior relies heavily on these men accurately knowing their serostatus, but, as the definition of the term “non-positive” indicates, not all of them did. Moreover, in the bathhouse context, even seemingly “safe” behaviors might be avenues of exposure. For example, someone who is non-positive and only engages in insertive UAI with one partner (regardless of serostatus) might think his risk is reduced by being the inserter and using withdrawal. Yet if his receptive partner just had receptive UAI with an HIV-positive partner, information likely unknown to the inserting respondent, then he could be placing himself at risk because of his exposure to

the third-party semen inside the rectum of his receptive partner. However, the possibility for this situation to occur was limited, as only four men reported receptive UAI to ejaculation with more than one partner and only one HIV-positive man reported insertive UAI to ejaculation.

The temptation is to attribute the absence of conditions for widespread HIV transmission to patrons understanding HIV transmission and consequently behaving in ways that reduce the risk for transmission or infection. The extensive prevention efforts of this particular bathhouse and its local health department are certainly directed towards such goals (Binson, Blea, Cotten, Kant, & Woods, 2005; Huebner, Binson, Woods, Dilworth, Neilands, & Grinstead, 2006; Huebner, Binson, Dilworth, Neilands, Grinstead, & Woods, in press; Woods, Erwin, Lazarus, Serice, Grinstead, & Binson, 2008). However, our survey measure of anal intercourse was inclusive in that men were to report any inserting of penis into anus even for the briefest of moments and even if neither partner achieved orgasm as a consequence of the act. Consequently, it is not always clear how intentional the choice of anal sex behaviors were because some men may have interrupted anal intercourse for any number of reasons, only one of which might have been risk reduction. Because we asked men to count any anal penetration as anal intercourse, men who lost interest in a partner, or lost an erection, or experienced any of a number of other similar circumstances would have reported withdrawal during anal intercourse. Regardless, while some men may practice withdrawal to avoid infection (Parsons et al., 2005), and it is likely better than not withdrawing, it still carries some risk.

There are several limitations to this study. Bathhouses vary from one venue to the next, so generalizing from the study bathhouse to similar settings should be approached cautiously. Although the data were collected during the same time of year, they were collected one year apart. However, with the exception of ethnicity, the two samples did not differ in their sexual behavior during the bathhouse visit, their sexual behavior in the 3 months prior to the visit, or in other demographic characteristics. Self-report methods include an obvious opportunity for response bias both by having men downplay or overstate their actual behavior. In a 1995 study conducted at several sex venues where all sexual behavior could be observed (Woods, Mayne, & Kegeles, 1996), the observed and self-reported data were concordant, suggesting that men easily remembered and accurately reported their behavior in the venues. In the current study the interview was conducted in a private room to protect confidentiality, and no identifying information was collected (consent was verbal) in order to guarantee anonymity. In addition, survey items related to condom use were worded in a neutral way by implying that using condoms or not using condoms were normative behaviors and our interest was just in knowing what reflected their activity during their current visit (Catania, Binson, Hauck, & Canchola, 1996). Prior analysis of data from one of the samples used in the present study resulted in predictable relationships between UAI and a variety of correlates (Woods et al., 2007), which can be taken as further evidence of the validity of the data.

Previous research has noted that men who engage in UAI are more likely than others to use sex clubs and bathhouses (Binson et al., 2001), thus such venues have already been marked as potential intervention sites. Yet, the data presented here suggest that, despite the sexually charged environment of a gay bathhouse, only a limited minority of men either pose or are exposed to a risk for transmission of HIV. Even among those who engage in UAI, most men's risk is limited because they engage in anal intercourse with only one partner per visit and tend to withdraw prior to ejaculation. Whether such risk reduction at the bathhouse is intentional or not, it could serve as the basis for interventions at the bathhouse, specifically by serving as a model of the kinds of safer behavior public health officials would like MSM to incorporate in other venues where risk behavior takes place.

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Table 1
Demographic Characteristics & Behaviors of Patrons Exiting Bathhouse (N=758)

CHARACTERISTIC	n (%)	BEHAVIOR (Last 3 Months)	n (%)
Age		Number of Sex Partners	
18-29	86 (11.5)	0	47 (6.3)
30-39	264 (35.3)	1-5	278 (37.4)
40-49	235 (31.4)	6-10	149 (20.1)
50 or older	164 (21.8)	11+	270 (36.3)
Race/Ethnicity		Number of Anal Sex Partners	
White	443 (59.0)	0	218 (29.0)
Asian/Pacific Islander	91 (12.1)	1	148 (19.7)
African American (Black)	70 (9.3)	2-4	208 (27.7)
Latino (Hispanic)	93 (12.3)	5+	178 (23.7)
Other or Mixed	54 (7.2)	Unprotected Anal Intercourse	
Education (degree)		Yes	247 (34.8)
Less than college	57 (7.6)	No	462 (65.2)
Some college	162 (21.6)		
College degree	350 (46.8)		
Advanced	179 (23.9)		
Income			
\$20,000 or less	80 (11.6)		
\$20,001 - \$40,000	124 (18.0)		
\$40,001 - \$60,000	186 (27.0)		
\$60,001 - \$80,000	139 (20.1)		
\$80,001 - \$100,000	96 (13.9)		
More than \$100,000	65 (9.4)		
Residence			
Local urban area	260 (35.0)		
MSA central city	216 (29.1)		
Other areas	267 (35.9)		
Marital Status			
Single/never married	552 (73.3)		
Married	68 (9.0)		
Separated/Divorced/Widowed	133 (17.7)		
Have Domestic Partner			
Yes	217 (28.8)		
No	537 (71.2)		
Sexual Orientation			
Gay (homosexual, queer)	545 (73.0)		
Bi/Straight Something Else	201 (27.0)		
Tested HIV positive			
Yes	125 (16.7)		

CHARACTERISTIC	n (%)	BEHAVIOR (Last 3 Months)	n (%)
No	623 (83.3)		

Table 2
Mean Number of Partners by Sexual Behavior and HIV Serostatus

Behavior	Positive Mean (N)	Non-Pos. ^a Mean (N)	Incidence Rate Ratio (95% CI) ^b	P-value ^b
Any Sexual Contact ^c	4.0 (125)	3.0 (623)	1.35 (1.13, 1.62)	.001
Oral, Performed ^d	2.9 (125)	1.6 (623)	1.76 (1.37, 2.27)	<.001
No ejaculate in mouth	3.0 (109)	2.2 (429)	1.37 (1.09, 1.73)	.006
Ejaculate in mouth	0.3 (109)	0.1 (429)	1.87 (1.03, 3.40)	.041
Oral, Received ^e	2.7 (124)	2.2 (622)	1.25 (1.03, 1.52)	.023
No ejaculate in mouth	2.9 (114)	2.2 (560)	1.30 (1.08, 1.55)	.005
Ejaculate in mouth	0.1 (114)	0.2 (560)	0.38 (0.17, 0.86)	.021
Insertive Anal	0.9 (125)	0.5 (621)	1.56 (1.19, 2.05)	.001
Always Condom	1.1 (71)	1.2 (242)	0.89 (0.70, 1.13)	.341
No Condom (UIAI)	0.4 (71)	0.2 (242)	1.99 (1.17, 3.39)	.011
Withdrew	1.1 (26)	0.8 (44)	1.35 (0.95, 1.93)	.092
To ejaculation	0.1 (26)	0.3 (44)	0.18 (0.05, 0.71)	.015
Receptive Anal	0.9 (125)	0.3 (621)	2.88 (1.93, 4.28)	<.001
Always Condom	1.2 (59)	1.3 (124)	0.93 (0.65, 1.35)	.718
No Condom (URAI)	0.6 (59)	0.2 (124)	2.74 (1.47, 5.11)	.002
Withdrew	1.2 (22)	0.9 (24)	1.38 (0.89, 2.14)	.147
To ejaculation	0.4 (22)	0.3 (24)	1.29 (0.29, 5.80)	.733

^aNon-Positive, i.e., did not test positive for HIV

^bObtained from negative binomial regression regressing behavior (number of partners) on HIV serostatus

^cHad oral or anal sex during visit to club

^dRespondent gave oral sex to his partner

^eRespondent received oral sex from his partner

Table 3
Proportions of withdrawal or ejaculation among those having unprotected anal intercourse (receptive or insertive) by serostatus and numbers of partners

Unprotected Anal Intercourse	Insertive			Receptive		
	Withdraw	To Ejaculation	Withdraw	To Ejaculation	Withdraw	To Ejaculation
	%	(n)	%	(n)	%	(n)
Positive Respondents						
1 Partner	63.0%	(17)	3.7%	(1)	50.0%	(11)
>1 Partner	33.3%	(9)	0.0%	(0)	31.8%	(7)
Total	96.3%	(26)	3.7%	(1)	81.8%	(18)
Non-positive Respondents						
1 Partner	55.6%	(25)	20.0%	(9)	52.2%	(12)
>1 Partner	15.6%	(7)	8.9%	(4)	26.1%	(6)
Total	71.1%	(32)	28.9%	(13)	78.3%	(18)