

# History of Childhood Sexual Abuse and HIV Risk Behaviors in Homosexual and Bisexual Men

David J. Brennan, MSW, Wendy L. Hellerstedt, MPH, PhD, Michael W. Ross, PhD, MPH, Seth L. Welles, PhD, ScD

Associations between childhood sexual abuse and persons who are HIV positive, persons who have experienced sexually transmitted infections (STIs), and adult high-risk sexual behaviors have been identified in studies of adult women<sup>1-6</sup> and of gay and bisexual men. Many of the studies of gay and bisexual men, however, have enrolled high-risk convenience samples of men recruited from gay-specific commercial venues (e.g., bars, clubs) and STI, drug, and other medical clinics.<sup>7-14</sup> Previous research has highlighted that individuals at risk for HIV/STIs are more likely to have experienced childhood sexual abuse. The reported prevalence of childhood sexual abuse among men who have sex with men (MSM) has ranged from 11% to 37%; the highest prevalence was reported from HIV/STI clinic samples (i.e., 34%–37%).<sup>7,8,10</sup> A lower prevalence of childhood sexual abuse (i.e., 15%–28%) has been reported in nonclinic-based samples that were recruited using census data or randomized-digit dialing methods,<sup>11,13,15</sup> as well as in festival-based samples.<sup>16</sup> Although these studies have been valuable for establishing the association between childhood sexual abuse and HIV/STI risk in these sexual high-risk study groups, it is not clear if similarly high associations of reported frequency of childhood sexual abuse and HIV/STI exist for more demographically diverse gay and bisexual populations of men.

Our cross-sectional study was designed to examine a lower risk gay and bisexual population of men. We identified a randomly selected festival-based sample from the 1997 and 1998 Twin Cities' Men's Health and Sexuality Study conducted by the Minnesota AIDS Project. We then assessed the prevalence and frequency of childhood sexual abuse in gay and bisexual men, and identified the factors associated with childhood sexual abuse and HIV/STI transmission. We hypothesized that gay and bisexual men who had experienced childhood sexual abuse would be more likely than

**Objectives.** We examined the prevalence and frequency of childhood sexual abuse and their association with sexual risk among a sample of gay and bisexual men.

**Methods.** Cross-sectional data were collected by survey from randomly selected gay and bisexual men who attended the 1997 and 1998 Minneapolis/St. Paul Gay, Lesbian, Bisexual, and Transgender Pride Festivals. Data included demographics, sexual activity, history of childhood sexual abuse, HIV status, history of sexually transmitted infection, use of sex-related drugs (such as crack, cocaine, Ecstasy, amyl nitrate, crystal methamphetamine, and Special K), and history of exchanging sex for payment.

**Results.** Childhood sexual abuse was reported by 15.5% of the survey respondents ( $n = 134$ ). Those who reported experiencing abuse regularly were more likely to (1) be HIV positive, (2) have exchanged sex for payment, and (3) be a current user of sex-related drugs. Neither unsafe sex nor sexually transmitted infections were associated with childhood sexual abuse.

**Conclusions.** These findings show that more than 1 in 7 gay and bisexual men in a non-clinical, festival-based setting were victims of childhood sexual abuse and that childhood sexual abuse was associated with alarmingly high rates of men who were HIV infected and antecedent risk behaviors. (*Am J Public Health.* 2007; 97:1107–1112. doi:10.2105/AJPH.2005.071423)

those who had no history of childhood sexual abuse to report HIV-positive status and to report behaviors associated with HIV/STI transmission.

## METHODS

The Twin Cities' Men's Health and Sexuality Study was conducted at the Minneapolis and St. Paul Gay, Lesbian, Bisexual, and Transgender Pride Festivals in June 1997 and June 1998. More than 100 000 people attend this each year. This annual festival, which began in 1969, attracted diverse lesbian, gay, bisexual, and transgender (LGBT) participants because it offered some events for LGBT families with children as well as political, social, cultural, entertainment, and recreational activities. The same media strategy was used both years to publicize the study (e.g., identical print ads were placed in the local gay press); thus, it was assumed that festival-goers were similar each year.

Survey recruitment and data collection were comparable in both festival years. All survey participants were selected by trained volunteers who used a random numbers

table to approach men at the festival; the details of participant selection are reported elsewhere.<sup>17</sup> Those who agreed to participate were asked to take a self-administered survey, which had been reviewed and pilot-tested by volunteers from the Minnesota AIDS Project and other members of the LGBT community in the Twin Cities area. With a few minor exceptions, survey questions were identical and they were asked in the same order. When recruited, men were led to tables located in a specific central location or were permitted to fill out questionnaires remotely; both locations offered complete privacy. All participants gave oral informed consent to preserve their anonymity.

Eligible participants for this analysis were men (not transgendered) and at least 18 years of age. To assure a geographically well-defined sample, participants also had to reside primarily in the Upper Midwest (identified by zip code as residing in Minnesota, North Dakota, South Dakota, Iowa, or Wisconsin). There were 936 participants: 326 from 1997 and 610 from 1998. The lower number of participants in 1997 does not reflect differences in recruitment strategy or effort; rather,

enrollment time was reduced in 1997 by a tornado that struck the festival grounds. The participant response rate for men is unavailable for 1997, but the participation rate for women in a similar study at the same site in 1997 was 54%.<sup>17</sup> This rate of participation is corroborated by data that were collected on participation in 1998: 56% of the men approached agreed to participate.

The dependent variables for analysis were HIV infection status (positive, negative, or unknown); history of a diagnosed STI (yes or no; defined as syphilis, chlamydia, gonorrhea, herpes, hepatitis B, human papillomavirus); self-defined current use of sex-related drugs (yes or no; defined as drugs known to be associated with increased sexual risk-taking behavior, including cocaine, crack, poppers (amyl nitrate), crystal methamphetamine, Ecstasy, Special K [ketamine]); history of ever exchanging sex for payment (yes or no; defined as exchanging sex for money, clothes, food, shelter, drugs); and frequency of unsafe anal intercourse in the past 60 days (defined as receptive or insertive anal intercourse without a condom with a primary sexual partner of HIV serodiscordant or unknown infection status, or receptive or insertive anal intercourse without a condom with any secondary sexual partners).

The key independent variable was reported history of child sexual abuse, which was operationalized in 2 ways. First, childhood sexual abuse was dichotomized to reflect endorsement of a question that asked whether "as a child or adolescent" participants were "ever forced to have unwanted sexual activity with adults." Second, childhood sexual abuse was described in terms of frequency (i.e., never, once or rarely, sometimes, regularly). Other independent variables included race/ethnicity (i.e., White, African American or Latino, Asian or Pacific Islander, multiracial or other). African American and Latino men were combined because of the small numbers of respondents (4.8% of total sample, when combined) and because these men have reported similarly higher rates of unsafe sexual behavior when compared with White men.<sup>18,19</sup> Other data collected were age, education (i.e., some high school or high school graduate, some college, college graduate, graduate or professional school), acculturation to the LGBT community (i.e., a dichotomous

variable reflecting responses to questions about reported comfort level with sexuality, degree of being "out," relationships with other LGBT community members, patronization of LGBT businesses, activity in the LGBT community), types of sexual partnerships (i.e., exclusively partnered, nonexclusively partnered including having primary and secondary partners, single).

To optimize statistical power for this analysis, we combined data collected from 2 successive

years of a study that used identical recruitment procedures and survey items. Although a randomization procedure was used to select participants from over 100 000 attendees per year at the festivals, there is a slight possibility that a very few men may have participated in the survey in both years. Differences between study years were detected using the  $\chi^2$  or Fisher exact test in reported acculturation, age, and sexual orientation. As shown in Table 1, sample characteristics for both years

**TABLE 1—Childhood Sexual Abuse Study Sample Characteristics (N = 936): Twin Cities' Men's Health and Sexuality Study, 1997 and 1998**

Characteristic	Population no. (%)		
	1997 (n = 326)	1998 (n = 610)	1997 and 1998 (N = 936)
Age, y (n = 925)*			
18-25	55 (17.5)	76 (12.5)	131 (14.2)
26-35	125 (39.7)	247 (40.5)	372 (40.2)
36-45	99 (31.4)	181 (29.7)	280 (30.3)
≥ 45	36 (11.4)	106 (17.4)	142 (15.4)
Race/ethnicity (n = 896)			
White	292 (90.1)	504 (88.1)	796 (88.8)
African American/Latino	14 (4.3)	29 (5.1)	43 (4.8)
Asian/Pacific Islander	8 (2.5)	15 (2.6)	23 (2.6)
Multiracial/other	10 (3.1)	24 (4.2)	34 (3.8)
Education (n = 887)			
Some high school/high school graduate	29 (8.9)	49 (8.7)	78 (8.8)
Some college	109 (33.4)	154 (27.5)	263 (29.7)
College graduate	114 (35.0)	211 (37.6)	325 (36.6)
Graduate/professional school	74 (22.7)	147 (26.2)	221 (24.9)
Sexual orientation (n = 932)**			
Gay	294 (91.0)	594 (97.5)	888 (95.3)
Heterosexual	4 (1.2)	1 (0.2)	5 (0.5)
Bisexual	18 (5.6)	6 (1.0)	24 (2.6)
No preference/MSM	7 (2.2)	8 (1.3)	15 (1.6)
Acculturation to LGBT community (n = 859)**			
High/moderate acculturation	236 (93.7)	592 (97.5)	828 (96.4)
Low acculturation	16 (6.4)	15 (2.5)	31 (3.6)
Sexual relationship status (n = 908)			
Exclusively partnered	117 (37.0)	216 (36.5)	333 (36.7)
Partnered but have sex outside relationship	69 (21.8)	150 (25.3)	219 (24.1)
Single <sup>a</sup>	130 (41.1)	226 (38.2)	356 (39.2)
HIV status (n = 807)			
Positive	25 (8.8)	47 (9.0)	72 (8.9)
Negative	259 (91.2)	476 (91.0)	735 (91.1)

Note. LGBT = lesbian, gay, bisexual, and transgender, MSM = men who have sex with men. Participant totals by characteristic may vary from total study samples because of incomplete data.

<sup>a</sup>Multiple and one-time partners.

\* $P < .05$ , for  $\chi^2$  analyses; \*\* $P < .01$ , for  $\chi^2$  analyses.

**TABLE 2—Sample Characteristics (n = 862), by Reported Childhood Sexual Abuse: Twin Cities' Men's Health and Sexuality Study, 1997 and 1998**

Characteristic	Childhood Sexual Abuse Reported (n = 134; 15.5%), No. (%)	No Childhood Sexual Abuse Reported (n = 728; 84.5%), No. (%)	Total (n = 862; %), No. (%) <sup>a</sup>
<b>Age, y (n = 852)</b>			
18–25	18 (13.6)	106 (14.7)	124 (14.6)
26–35	53 (40.1)	288 (40.0)	341 (40.0)
36–45	41 (31.1)	217 (30.1)	258 (30.3)
≥ 45	20 (15.2)	109 (15.1)	129 (15.1)
<b>Race/ethnicity (n = 829)</b>			
White	113 (88.3)	630 (89.9)	743 (89.7)
African American/Latino	7 (5.4)	28 (4.0)	35 (4.2)
Asian/Pacific Islander	2 (1.6)	19 (2.7)	21 (2.5)
Multiracial/other	6 (4.7)	24 (3.4)	30 (3.6)
<b>Education<sup>b</sup> (n = 817)*</b>			
Some high school/high school graduate	12 (9.4)	55 (8.0)	67 (8.2)
Some college	49 (38.3)	190 (27.6)	239 (29.2)
College graduate	44 (34.4)	262 (8.0)	306 (37.5)
Graduate/professional school	23 (17.9)	182 (26.4)	205 (25.1)
<b>Sexual orientation (n = 817)</b>			
Gay	123 (92.5)	694 (95.7)	817 (95.2)
Heterosexual	1 (0.7)	4 (0.6)	5 (0.6)
Bisexual	4 (3.0)	20 (2.8)	24 (2.8)
No preference/MSM	5 (3.8)	7 (1.0)	12 (1.4)
<b>Acculturation to LGBT community (n = 790)</b>			
High acculturation	99 (73.9)	530 (72.8)	629 (73.0)
Moderate acculturation	19 (14.2)	114 (15.7)	133 (15.4)
Low acculturation	3 (2.2)	25 (3.4)	28 (3.2)
<b>Sexual relationship status (n = 838)</b>			
Exclusively partnered	48 (37.2)	264 (37.2)	312 (37.2)
Partnered but have sex outside relationship	33 (25.6)	164 (23.1)	197 (23.5)
Single <sup>c</sup>	48 (37.2)	281 (39.6)	329 (39.3)
<b>HIV status (n = 753)</b>			
Positive	13 (10.6)	54 (8.6)	67 (8.9)
Negative	110 (89.4)	576 (91.4)	686 (91.1)
<b>Ever exchanged sex for payment (n = 852)**</b>			
Yes	28 (21.4)	38 (5.3)	66 (7.8)
No	103 (78.6)	683 (94.7)	786 (92.2)
<b>Current use of sex-related drugs<sup>d</sup> (n = 617)**</b>			
Yes	24 (26.1)	61 (11.6)	85 (13.8)
No	68 (73.9)	464 (88.4)	532 (86.2)
<b>Ever had an STI (n = 622)**</b>			
Yes	53 (57.0)	220 (41.6)	273 (43.9)
No	40 (43.0)	309 (58.4)	349 (56.1)
<b>Unsafe sex in last 60 days<sup>e</sup> (n = 795)</b>			
Yes	23 (18.9)	117 (17.4)	140 (17.6)
No	99 (81.1)	556 (82.6)	655 (82.4)

Note. LGBT = lesbian, gay, bisexual, and transgender, MSM = men who have sex with men, STI = sexually transmitted infection. Participant totals by characteristic may vary from total study samples because of incomplete data.

<sup>a</sup>Percentages are on the basis of the proportion of the number of participants who provided data on each characteristic.

<sup>b</sup>Those who lacked a college degree were 1.87 times more likely to have reported childhood sexual abuse ( $P < .001$ ).

<sup>c</sup>Multiple and one-time partners.

<sup>d</sup>Such as cocaine, crack, amyl nitrate, crystal methamphetamine, Ecstasy, and Special K.

<sup>e</sup>Unsafe sex is defined as unprotected anal intercourse with a primary partner whose HIV status is serodiscordant or unknown, or unprotected anal intercourse with any secondary sexual partner.

\* $P < .05$ , for  $\chi^2$  analyses; \*\* $P < .01$ , for  $\chi^2$  analyses.

of enrollment were similar, except that the 1997 participants were younger ( $P = .03$ ), more likely to identify as bisexual or have no identified sexual orientation ( $P \leq .001$ ), and were less likely to be acculturated to the LGBT community ( $P = .006$ ). Although these differences were statistically significant, the differences did not seem of sufficient magnitude to preclude combining the datasets.

Before conducting the multivariate analyses, univariate logistic regression analyses were conducted to estimate the associations of childhood sexual abuse frequency with outcomes. Those factors identified as statistically significant confounders ( $P \leq .05$ ; associated with both childhood sexual abuse frequency as well as the outcome variables), or factors having strong associations with outcome variables which did not reach statistical significance ( $P \leq .20$ ), were retained in the final multiple logistic regression analysis.

As shown in Table 2, men who reported histories of childhood sexual abuse did not vary from those who did not report such histories by age, race, sexual orientation, acculturation to the LGBT community, relationship status, or HIV status. Because men without a college degree were more likely to have reported childhood sexual abuse ( $P = .002$ ), we considered education level as a potential confounding variable; thus, final estimates of the associations between childhood sexual abuse and the outcome variables were adjusted to alleviate potential confounding. In addition, although the association of childhood sexual abuse with HIV status did not reach statistical significance ( $P = .16$ ), it was associated with unsafe anal intercourse and thus, HIV status was also retained in multivariate analyses as a potential confounder.

Preliminary analyses indicated that further restriction of the sample would be optimal. For the multivariate analysis, we included only men who had any reported sexual activity with a man in the 60 days before the survey, including receptive or insertive anal sex (with or without a condom), receptive or insertive oral sex (with or without a condom), and mutual masturbation. Because our definition of unsafe sexual behavior was based on having unprotected anal intercourse with a partner of discordant or unknown HIV-infection status, we also

excluded participants who had incomplete information about their (and their partner's, if appropriate) HIV status, their current relationship status, and childhood sexual abuse history. After exclusions, 862 of the original 936 participants were available for the multivariate analyses. Childhood sexual abuse frequency was the outcome variable for this analysis; those who reported no childhood sexual abuse were the referent group for those who reported that childhood sexual abuse had occurred once, sometimes, or regularly. Response rates for questions about ever having experienced childhood sexual abuse in the univariate analyses, or frequency of childhood sexual abuse in the multivariate analyses, differed because of incomplete data for childhood sexual abuse or the outcome variable. All logistic regression odds ratios (ORs) were reported with 95% confidence intervals (CIs).

## RESULTS

The median age of our sample was 34 years (interquartile range: 28–41 years). Most participants identified as gay (95.3%), White (88.8%), were well-educated (61.5% had at least a college degree), and were highly to moderately acculturated to the LGBT community (96.4%). Relationship status was divided among men who were exclusively partnered in a relationship (36.7%), partnered but having sexual intercourse outside of the relationship (24.1%), and single (39.2%). Nine percent of the men were HIV positive (Table 1).

In the combined sample of men who reported data for childhood sexual abuse, 15.5% of the participants reported histories of childhood sexual abuse ( $n = 134$ ): 71 reported having experienced childhood sexual abuse once or rarely, 35 reported sometimes, and 28 reported regular exposure.

The frequency of childhood sexual abuse was associated with HIV-positive status, a history of exchanging sex for payment, and current use of sex-related drugs (Table 3). Compared with those who reported no history of childhood sexual abuse, those who reported regularly experiencing childhood sexual abuse were at significantly greater risk for being HIV-positive (adjusted OR=2.9; 95%

**TABLE 3—Adjusted Odds Ratios (ORs; With 95% Confidence Intervals [CIs]) for the Association between Frequency of Childhood Sexual Abuse and Outcome Variables: Twin Cities' Men's Health and Sexuality Study, 1997 and 1998**

Outcome Variable <sup>a</sup>	Unadjusted OR (95% CI)	P	Adjusted OR (95% CI)	P
Exchanged sex for payment <sup>b</sup> ( $n = 704$ )				
Once	4.10 (2.07, 8.13)	<.001	3.93 (1.94, 7.96)	<.001
Sometimes	4.84 (1.98, 11.86)	<.006	3.25 (1.16, 9.14)	.025
Regularly	7.19 (2.97, 11.38)	<.001	6.98 (2.74, 17.78)	<.001
Current use of sex-related drugs <sup>b,c</sup> ( $n = 499$ )				
Once	2.15 (1.04, 4.41)	.04	1.92 (0.89, 4.15)	.10
Sometimes	1.90 (0.69, 5.25)	.21	2.15 (0.73, 6.27)	.16
Regularly	6.76 (2.52, 18.18)	<.001	6.37 (2.15, 18.91)	<.009
HIV-positive <sup>b</sup> ( $n = 713$ )				
Once	0.69 (0.24, 1.96)	.49	0.57 (0.20, 1.67)	.31
Sometimes	1.07 (0.32, 3.61)	.92	0.62 (0.14, 2.72)	.53
Regularly	3.56 (1.35, 9.33)	.01	2.87 (1.05, 7.85)	.04
Ever had an STI <sup>b</sup> ( $n = 509$ )				
Once	1.65 (0.92, 2.95)	.09	1.64 (0.88, 3.07)	.12
Sometimes	1.92 (0.86, 4.25)	.11	1.69 (0.69, 4.14)	.25
Regularly	2.58 (0.94, 7.07)	.07	3.10 (0.95, 10.10)	.06
Unsafe sex <sup>d</sup> ( $n = 661$ )				
Once	0.82 (0.41, 1.65)	.58	0.64 (0.28, 1.45)	.28
Sometimes	1.19 (0.48, 2.97)	.71	1.17 (0.43, 3.23)	.76
Regularly	1.96 (0.76, 4.83)	.14	1.95 (0.71, 5.32)	.19

Note. STI = sexually transmitted infection. The referent group for analysis was those who reported no history of childhood sexual abuse.

<sup>a</sup>All outcome variables were adjusted for education level and HIV status except HIV positive, which was adjusted for education level only.

<sup>b</sup>Number of participants in the adjusted analysis.

<sup>c</sup>Such as cocaine, crack, amyl nitrate, crystal methamphetamine, Ecstasy, and Special K.

<sup>d</sup>Unsafe sex is defined as unprotected anal intercourse with a primary partner whose HIV status is serodiscordant or unknown or unprotected anal intercourse with any secondary sexual partner.

CI=1.05, 7.85;  $P=.04$ ). Other factors known to be antecedents to HIV infection were also significantly associated with a history of regular childhood sexual abuse. Compared with men who reported no history of childhood sexual abuse, those who reported experiencing childhood sexual abuse regularly were 7.0 times more likely (95% CI=2.74, 17.78;  $P<.001$ ) to have ever exchanged sex for payment, and 6.4 times more likely (95% CI = 2.15, 18.91;  $P<.001$ ) to be a current user of sex-related drugs. In addition, men who had a history of regular childhood sexual abuse were 3.1 times more likely (95% CI=0.95, 10.10) to have reported having been diagnosed with an STI (this association approached statistical significance,  $P=.06$ ). By contrast, childhood sexual abuse was not

associated with reported unsafe sex in the 60 days before the survey.

## DISCUSSION

In this festival-based sample of gay and bisexual men, more than 1 in 7 participants reported a history of childhood sexual abuse. Frequency of childhood sexual abuse, as well as its prevalence, was related to high-risk sexual behaviors and HIV-positive status. Although higher prevalence has been reported in gay and bisexual men who were sampled from clinics or bars,<sup>7,8,10,11</sup> our data were collected using a randomized selection procedure at a broad community festival where events were not specifically linked with sexual activity. The median age of our

sample was 34 years, which is similar to other studies of childhood sexual abuse among gay and bisexual men.<sup>7,8,10,11,16</sup> Our sample participants were more likely to be partnered than single, and 63% had a college degree. Thus, our sample represented a group of men who were lower risk in terms of demographics and sexual risk-taking when compared with men enrolled at specific gay commercial venues or STI clinics.<sup>7,8,10</sup>

Previous reports of the prevalence of childhood sexual abuse among gay and bisexual men range from 11% to 37%. Childhood sexual abuse in this study was defined as self-reported sexual abuse; this definition may be more subjective when compared with other definitions of childhood sexual abuse that were defined by differences in age of respondents and their sexual partners.<sup>8,9,11,20</sup>

Research has shown that individuals at risk for HIV and STIs are more likely to have experienced childhood sexual abuse; therefore, it is not surprising that previous research using HIV/STI clinic samples of gay and bisexual men reported the highest prevalences of childhood sexual abuse (i.e., from 34% to 37%).<sup>7,8,10</sup> Our prevalence of 15.5% is consistent with reports of 15%–28% from non-clinic-based samples derived from census data, events, or randomized-digit dialing sample frames,<sup>11,13,15</sup> which underscores the utility of our festival-based sampling method to identify men representative of the general gay and bisexual male community.

Previous research has identified many risk factors for gay and bisexual men associated with childhood sexual abuse, including a current practice of risky sex,<sup>8,10,11,13,14,16</sup> low levels of education,<sup>9,14</sup> and nonconsensual sex in adulthood.<sup>1,13,20–22</sup> Our findings were consistent with those that reported associations between childhood sexual abuse and HIV-infection,<sup>8,11,14</sup> having ever exchanged sex for money or drugs,<sup>16,20,23–25</sup> and current use of sex-related drugs.<sup>26–28</sup> Our findings extend earlier reports that identified some high-risk sexual outcomes among men who report childhood sexual abuse, by providing adjusted relative measures of risk by the increasing level of frequency of childhood sexual abuse. Compared with men who reported no abuse, gay and bisexual men who reported regular abuse were significantly more likely to have

been HIV-positive, to have reported current use of sex-related drugs, and to have reported histories of having ever exchanged sex for payment. Although not statistically significant, the risks for having ever had an STI and unsafe sexual practices were also higher for gay and bisexual men who reported regularly experiencing childhood sexual abuse compared with those who reported no childhood sexual abuse.

Although other studies have found a direct link between childhood sexual abuse and unsafe anal intercourse,<sup>8,9,10,16</sup> we did not find significant associations with either childhood sexual abuse variable (i.e., having ever experienced childhood sexual abuse and frequency of childhood sexual abuse). Our inability to find consistent associations could be related to the limited number of men who reported regular childhood sexual abuse and who engaged in contextualized (by HIV-infection status) unsafe anal intercourse; other studies often report any anal intercourse without condoms as being unsafe, which increases the number of men in this category available for analysis. Further, post hoc power analysis showed that our sample size was insufficient to detect statistically significant associations of regular childhood sexual abuse ( $n=28$ ) with some outcomes, including ever having had an STI or self-reported unsafe sex in the past 60 days.

Limitations of this study include potential misclassification of both independent and dependent variables, because these were ascertained by self-report. Although this is a possibility and results could be biased toward no association, we were able to detect strong associations between childhood sexual abuse and HIV infection and risk behaviors. Another possible limitation is that our study population, who were residents of the Upper Midwest, may differ from residents in other parts of the United States, although it is not clear what geographic differences could influence the association of childhood sexual abuse and HIV risk. Our findings could have been influenced by nonparticipation bias, but we do not have the data to speculate about the potential effect of such bias.

Despite these limitations, our findings advance the field by offering results for gay and bisexual men who were not enrolled in the study because of their involvement in a

high-risk clinic or bar setting. Our sample may be more representative of the diversity of risk behaviors and social contexts of the gay and bisexual population of men. A strength of our study is that we used a randomized selection method to recruit study participants, which reduced some of the potential self-selection bias inherent in using a booth to attract volunteers to participate in behavioral studies. The sampling methods may apply to any public event that has large numbers of participants who may be drawn together by a common interest. Such individuals may, in fact, be more confident about survey anonymity and more likely to participate because data are collected in a public venue rather than a more private venue (e.g., STI clinics, schools, households).

Our findings suggest that almost 1 in 7 gay and bisexual men in a nonclinical, community setting may be victims of childhood sexual abuse; that childhood sexual abuse is associated with HIV infection and antecedent risk behaviors; and that these risks increase with greater frequency of childhood sexual abuse. These findings confirm the importance of taking into account the relevance of childhood sexual abuse frequency and its affect on the delivery of services, prevention interventions, and health care to gay and bisexual men. Given that perhaps 16% of gay and bisexual men have histories of childhood sexual abuse and given that our study, and others, show that childhood sexual abuse is strongly associated with sexual behaviors that increase the risk for HIV infection, we recommend that healthcare providers screen gay and bisexual men for childhood sexual abuse history and be prepared to counsel and refer their clients if a past history is reported. Also, practitioners who work with victims of child sexual assault may want to consider how sexual risk-taking relates to therapeutic approaches and recovery. We also recommend further research to better understand how a history of childhood sexual abuse could contribute to sexual risk-taking in gay and bisexual men and what educational and health promotion interventions to reduce risk-taking may be most effective with such men. We also believe that data such as ours reflect the importance of LGBT voices in

policy development and advocacy to address child sexual abuse. ■

### About the Authors

David J. Brennan, is a PhD candidate at the School of Social Work, Boston College, Chestnut Hill, Mass. Wendy L. Hellerstedt is with the School of Public Health, University of Minnesota, Minneapolis. Michael W. Ross is with the School of Public Health, University of Texas, Houston. Seth L. Welles is with the School of Public Health, Boston University, Boston, Mass.

Requests for reprints should be sent to Seth L. Welles, PhD, Boston University School of Public Health, Department of Epidemiology, 715 Albany St, 3TE, Boston, MA 02118. (e-mail: shwelles@bu.edu).

### Contributors

D.J. Brennan, conceptualized the study, conducted the analysis, and led the writing. W.L. Hellerstedt assisted with the interpretation of the analyses and the writing and revision of the article. M.W. Ross assisted with the interpretation of the analyses and reviewing drafts of the article. S.L. Welles originated and designed the original study, wrote sections of the article, oversaw all aspects of the study's implementation, including the analysis, and the writing and revision of the article.

### Human Participant Protection

All instruments and procedures used in this study were approved by the institutional review board at the University of Minnesota.

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