

HIV and Sexually Transmitted Infection Risk Behaviors Among Men Seeking Sex With Men On-Line

Recent indications suggest that safer sex behavioral trends among men who have sex with men (MSM) may have reversed.^{1,2} The Internet is an effective information exchange forum that allows for instant access to large groups, facilitating sex partner solicitation and

increasing risk for sexually transmitted infections (STIs).³⁻⁵

We report here on data collected from a survey posted on www.SexQuiz.org in 2000 documenting demographic information and HIV/STI-related risk behaviors involving non-Internet as well as Internet partners. Data were gathered on 3248 male respondents who were 18 years or older and living in North America at the time of the survey.

MSM completing the survey were younger than non-MSM, and higher proportions of these individuals had had their first sexual encounter by the age of 18 years; more non-MSM

than MSM were White. The respondents were predominantly White, aged 26 to 40 years, employed, and well educated. Most had health insurance coverage.

Table 1 presents risk behavior comparisons for the entire sample as well as for MSM and non-MSM. More MSM reported having had sex with an Internet partner than did non-MSM, and MSM reported a greater mean number of Internet partners, both in the previous 12 months and in their lifetime. Traveling more than 160 km (100 mi) to meet Internet partners was less common among MSM than non-MSM.

TABLE 1—HIV/STI-Related Risk Behaviors Among MSM and Non-MSM: Internet Survey, 2000

	Total (n=3248)	MSM (n=1380)	Non-MSM (n=1865)	Relative Risk	95% Confidence Interval
Went on-line to look for Internet sex partner, %	62.5	85.5	45.5**	7.0	5.9, 8.4
Had sex with Internet partner, % ^a	52.3	79.8	31.7***	8.5	7.2, 10.0
Mean no. of Internet partners in 12 months	7.2	9.0	4.2***	3.2	2.7, 3.9
Mean no. of Internet partners in lifetime	16.5	21.4	7.5***	4.3	3.6, 5.2
Mean no. of non-Internet partners in 12 months	4.5	8.1	1.8***	2.6	2.2, 3.0
Mean no. of non-Internet partners in lifetime	54.6	99.2	21.0***	2.7	2.4, 3.1
Has anal sex with Internet partners in ≥50% of such encounters, % ^a	29.7	39.7	11.2***	5.9	4.8, 7.3
Has anal sex with non-Internet partners in ≥50% of such encounters, %	21.0	37.7	6.9***	6.2	5.3, 7.3
Has vaginal sex with Internet partners in ≥50% of such encounters, % ^a	36.8	11.2	80.7***	0.0	0.0, 0.0
Has vaginal sex with non-Internet partners in ≥50% of such encounters, %	56.2	18.3	86.5***	0.0	0.0, 0.1
Used condom for last vaginal/anal sex with Internet partner, % ^a	60.9	70.7	45.4**	2.9	2.3, 3.6
Used condom for last vaginal/anal sex with non-Internet partner, %	42.7	57.0	33.3**	2.7	2.2, 3.1
Has oral sex with Internet partner in ≥50% of such encounters, % ^a	84.2	89.3	75.1***	2.0	1.6, 2.4
Has oral sex with non-Internet partner in ≥50% of such encounters, %	75.2	87.3	65.1***	2.8	2.5, 3.3
Used condom for most recent oral sex with Internet partner, % ^a	6.3	5.0	8.7**	0.5	0.4, 0.1
Used condom for most recent oral sex with non-Internet partner, %	5.0	4.2	5.7*	0.6	0.4, 0.8
Gets drunk or high with Internet partner in ≥50% of such instances, % ^a	16.1	16.0	16.1 NS	1.0	0.8, 1.3
Gets drunk or high with non-Internet partner in ≥50% of such instances, %	22.2	22.2	22.3 NS	0.8	0.7, 0.9
Discusses STI with Internet partner in ≥50% of such instances, % ^a	48.3	45.3	53.8***	0.7	0.6, 0.9
Discusses STI with non-Internet partner in ≥50% of such instances, %	37.3	38.0	36.7**	1.0	0.9, 1.2
Discusses HIV with Internet partner in ≥50% of such instances, % ^a	56.4	57.2	55.0***	1.0	0.9, 1.3
Discusses HIV with non-Internet partner in ≥50% of such instances, %	41.4	46.8	36.8***	1.6	1.4, 1.9
Tested for STI, %	53.1	61.5	47.0***	1.8	1.6, 2.1
Told of STI, %	17.2	25.1	11.2***	2.7	2.2, 3.2
Told of HIV infection, %	2.3	5.5	0.4***	10.4	4.9, 21.8
Travels more than 160 km for Internet partner, %	43.3	36.1	56.4***	0.4	0.4, 0.5

Note. STI=sexually transmitted infection; MSM=men who have sex with men.

^aInternet partner, n=1674 for entire data set, n=1093 for MSM, n=581 for non-MSM.

P*<.05; *P*<.01; ****P*<.001.

Compared with non-MSM, MSM had used a condom more frequently for their most recent intercourse with an Internet partner as well as for their most recent intercourse with a non-Internet partner. MSM had been tested for STIs more frequently than had non-MSM, but more MSM reported a history of STIs.

A logistic regression model of determinants of on-line partner seeking showed that MSM were 7 times more likely than non-MSM to have sex with Internet partners. Those who practiced good nutrition were 0.8 times as likely to have had sex with an Internet partner, and those tested for STIs were 0.6 times as likely to have done so. Age, HIV and STI status, race/ethnicity, and general health behaviors, including smoking and exercise, were not related to likelihood of sex with Internet partners.

The risk information provided in this survey was in line with information we have gathered via other, in-person surveys.⁴ The results provide critical, formative information for development of interventions targeted to those who seek sex partners on the Internet.

The public health community must consider the Internet as a venue for interventions aimed at reducing HIV/STI risk. We have illuminated specific risk behaviors and demographic characteristics of the population that may be "within reach" of these interventions.

The population of Internet-based sex seekers—largely a White, adult, well-educated, and insured group—is demographically very different from the clients of public STI programs toward which we target many HIV/STI risk-reduction interventions. This group is likely to seek health services from the private sector and may be difficult to reach through traditional methods. Just as the public health community is using bathhouses and shooting galleries to deliver prevention messages, it is important to consider using Internet-based interventions to reach those seeking sex on-line. □

Sheana Salyers Bull, PhD, MPH
Mary McFarlane, PhD
Cornelis Rietmeijer, MD, MSPH

At the time of the study, Sheana Salyers Bull was with the Denver Department of Public Health, Denver, Colo. She is now with the AMC Cancer Research Center, Denver. Mary McFarlane is with the Denver Department of Public Health. Cornelis Rietmeijer is with the Denver Department of Public Health and the Denver Health and Hospital Authority.

Requests for reprints should be sent to Sheana Salyers Bull, PhD, MPH, Center for Behavioral and Community Studies, AMC Cancer Research Center, 1600 Pierce St, Denver CO 80214 (e-mail: bulls@amc.org).

This research letter was accepted January 10, 2001.

Contributors

S. S. Bull planned the study, analyzed the data, and wrote the paper. M. McFarlane and C. Rietmeijer assisted with study design and analysis and edited the paper.

Acknowledgments

We gratefully acknowledge John Fitch and Patrick Piper for their invaluable contribution to this research.

This work was reviewed and approved by the Colorado Multiple Institutional Review Board, as well as institutional review boards at the Centers for Disease Control and Prevention and the AMC Cancer Research Center. All participants read and agreed to the terms of an informed consent.

References

1. Centers for Disease Control and Prevention. Resurgent bacterial sexually transmitted diseases among men who have sex with men—King County, Washington, 1997–1999. *MMWR Morb Mortal Wkly Rep.* 1999;48:773–777.
2. Centers for Disease Control and Prevention. Increases in unsafe sex and rectal gonorrhea among men who have sex with men—San Francisco, CA, 1994–1997. *MMWR Morb Mortal Wkly Rep.* 1999;48:45–48.
3. Bull SS, McFarlane M. Soliciting sex on the Internet: what are the risks for sexually transmitted diseases and HIV? *Sex Transm Dis.* 2000; 27:545–550.
4. McFarlane M, Bull SS, Rietmeijer CA. The Internet as a newly emerging risk environment for sexually transmitted diseases. *JAMA.* 2000;284: 443–446.
5. Klausner JD, Wolf W, Fischer-Ponce L, Zolt I, Katz MH. Tracing a syphilis outbreak through cyberspace. *JAMA.* 2000;284:447–449.