

Use of gay Internet sites and views about online health promotion among men who have sex with men

G. BOLDING,¹ M. DAVIS,¹ L. SHERR,² G. HART³ & J. ELFORD¹

¹City University London, Institute of Health Sciences, St Bartholomew School of Nursing and Midwifery, ²Royal Free and University College Medical School, London & ³MRC Social and Public Health Sciences Research Unit, University of Glasgow, UK

Abstract *In May–June 2002, 4,974 men who have sex with men (MSM), average age 31 years, completed a self-administered questionnaire online accessed through two popular gay Internet sites in the UK (gaydar and gay.com UK). Most men were white (95%), employed (83%), lived in the UK (91%) and self-identified as gay (85%). Nearly half (46%) had not been tested for HIV, while 6% said they were HIV-positive. One-third (31%) reported high-risk sexual behaviour in the previous three months, i.e. unprotected anal intercourse with a partner of unknown or discordant HIV status. Nearly all the men (82%) had looked for a sexual partner on the Internet and three-quarters had been doing so for more than a year. Almost half the men (47%) said they preferred to meet men through the Internet rather than in bars or other ‘offline’ venues. Although nearly 40% of men said the most important reason for using these Internet sites was to find sexual partners, a further 17% said they primarily used them to have contact with other men, 16% because they were bored, 12% for entertainment, 4% because they were lonely and 3% because they were addicted to it. The majority of men in this survey had favourable attitudes towards online health promotion. Most men thought that Internet sites should allow health workers into chat-rooms (75%); would click on a banner to find out about sexual health (78%); and said if they met a health worker in a chat-room they would find out what they had to say (84%). In multivariate analysis, being HIV-positive, older age and high-risk sexual behaviour were all independently associated with an increased frequency of using the Internet to look for sex ($p < 0.05$). The Internet has emerged as an important meeting place for men who have sex with men. As online HIV prevention initiatives are developed it will be important to monitor the extent to which the favourable attitudes seen here are reflected in preventive behaviours.*

Introduction

In the UK, access to the Internet has increased dramatically over the past decade, accompanied by a corresponding growth in its use for meeting sexual partners. The Internet

Address for correspondence: Graham Bolding, City University, Institute of Health Sciences, St Bartholomew School of Nursing and Midwifery, 20 Bartholomew Close, London EC1A 7QN, UK. Tel: +44 020 7040 5405; Fax: +44 020 7040 5717; E-mail: g.j.bolding@city.ac.uk

has become particularly popular among gay men who use a range of sites to meet other men for sexual encounters (Bolding *et al.*, 2003; McFarlane *et al.*, 2000). Among gay men surveyed in London gyms, the proportion who used the Internet to look for sex rose from less than one-third in 2000 to nearly a half in 2003. An association between high-risk sexual behaviour, increased rates of STI and using the Internet to look for sex has emerged among men who have sex with men (MSM) (Bull *et al.*, 2001; Elford *et al.*, 2001; Hospers *et al.*, 2002; Kim *et al.*, 2001; Klausner *et al.*, 2000; McFarlane *et al.*, 2000). The Internet and HIV study in London is exploring this association as well as collecting data that will guide online health promotion (Elford *et al.*, 2004a). Little is known about the attitudes of MSM in the UK towards online health promotion nor about the ways in which they use the Internet. This paper draws on a survey conducted online in May–June 2002 as part of the Internet and HIV study. We examine why MSM use gay Internet sites, their patterns of use and attitudes to online health promotion.

Methods

In May–June 2002 MSM using UK chat-rooms or personal profiles on gaydar and gay.com were invited to complete a confidential, anonymous self-administered questionnaire online. Gaydar and gay.com are the two most popular Internet sites used by gay/bisexual men in the UK (personal communication, H. Badenhurst and M. Watson). For a one-month period a series of pop-ups and banners in the chat-rooms and profiles pages advertised the online survey. Clicking on a pop-up or banner took men to the homepage of the questionnaire that took between 15–30 minutes to complete. The methods have been described in detail elsewhere (Elford *et al.*, 2004a).

Men were asked to provide information on sociodemographic characteristics including age, ethnicity, education, employment status and where they lived. They were also asked about their sexual orientation (gay, bisexual, heterosexual), HIV test history (date and result of last test), use of the Internet to look for sex, unprotected anal intercourse (UAI) in the previous three months and the HIV status of their UAI partner(s). High-risk sexual behaviour was defined as UAI with a discordant partner or with a partner of unknown HIV status, which clearly presents a risk for HIV transmission. Information was sought on where men preferred to meet male sexual partners (through the Internet or in venues such as bars, clubs and saunas), how long they had been using the Internet to seek sexual partners and how often they logged on for this purpose. Men were asked why they used chat-rooms and were given a list of possible reasons from which to choose. The list was based on previous surveys that had also asked this question (Bolding *et al.*, 2002). Men could select any number of reasons and also type additional reasons that were not listed. They were also asked to identify the *most important* reason from all those they had selected.

Men were asked three questions about their attitudes towards and intentions to engage with online health promotion. The first question, concerning 'outreach' work, was 'Do you think Internet sites should allow health workers into chat-rooms to talk about sexual health?' (Yes/No). The second question asked 'If you met a health worker in an Internet chat-room would you ... (a) find out what they had to say? or (b) close the window/cut them off?' The third question concerned using banners or pop-ups to advertise sexual health web sites. It asked 'Would you click on an Internet window to find out about sexual health?' (Yes/No).

Data were analyzed using SPSS for windows 11.5. Only men who completed the whole questionnaire were included in the analysis. Differences according to HIV status were examined comparing HIV-positive men with HIV-negative and never-tested men. Comparisons were also made according to age, between those men who were above or below the

median age. Patterns of Internet use were further examined according to high-risk sexual behaviour, sexual orientation (gay or bisexual) and place of residence (London or rest of UK). Univariate analysis was carried out using chi-square tests for categorical variables. Due to the large sample size, differences were only taken to be significant where $p < 0.01$ in univariate analysis. Where significant associations were found, multivariate analysis was then conducted using logistic regression. In the logistic models, HIV status, age, sexual risk behaviour, sexual orientation and residence were all entered as independent variables; frequency of use, reasons for use and attitudes towards online health promotion were entered as dependent variables. Differences between London men and other UK men are reported where they were significant.

Results

Sample characteristics

A total of 4,974 men completed the online questionnaire, of whom 1,250 (25.1%) lived in London, 3,279 (66%) lived outside London but within the UK and 445 (9%) men lived outside the UK. The median age of men who took part in the survey was 31 years (mean = 33 years). The majority of the men were white (95%) and most were in full-time employment (83%). More than half (53%) said they had had some form of higher education and a further 10% were still in full-time education. Nearly all the men self-identified as gay (85%) or bisexual (14%) and nearly half (43%) said they were in a relationship with another man at the time. Over half the men (54%) had had an HIV test (48% HIV-negative, 6% HIV-positive). The remaining men (46%) had never had an HIV test. Bisexual men were less likely to have ever tested for HIV than gay men (47% versus 71%, $p < 0.001$). Younger men (<31 years) were also less likely to have tested for HIV (48% versus 61%, $p < 0.001$).

Sexual behaviour

Two-thirds of the men (68%) reported little or no risk for HIV transmission in the previous three months. These men had either had no anal intercourse (37%), had always used condoms for anal intercourse (20%) or had had unprotected anal intercourse (UAI) only with a partner of the same HIV status as themselves (11%). Just under one-third of the men (31%) reported high-risk sexual behaviour, that is, UAI with a man whose HIV status was unknown or discordant. The proportion of men reporting high-risk sexual behaviour varied significantly by HIV status: HIV-positive, 39%; HIV-negative, 24%; never-tested, 36% ($p < 0.01$).

Internet use

Nearly all the men (98%) had entered a chat-room during the previous year and the majority had used the Internet to look for a sexual partner (82%). Of those men who had looked for sexual partners online ($n = 4,092$), almost a third did so at least once a day (29%) and a similar proportion (36%) several times a week (Table 1). The remaining men (35%) looked for sexual partners on the Internet once a week or less. Three-quarters (75%) of the men had been using the Internet to meet male sexual partners for more than a year.

HIV-positive men used the Internet to look for sexual partners more frequently than either HIV-negative or untested men, as did older men ($p < 0.001$) (Table 1). Men who frequently used the Internet to look for sex also reported elevated rates of high-risk sexual behaviour ($p < 0.001$) (Fig. 1). There was no association between frequency of use and sexual

Table 1. Frequency of using the Internet to look for sexual partners by HIV status, age and sexual orientation

	At least once a day		Several times a week		Once a week		Less than once a week		<i>p</i>
	<i>n</i>	row %	<i>n</i>	row %	<i>n</i>	row %	<i>n</i>	row %	
HIV status									
HIV-positive (<i>n</i> = 276)	114	41.3	110	39.9	16	5.8	36	13.0	<0.001*
HIV-negative (<i>n</i> = 1957)	539	27.5	725	37.0	231	11.8	462	23.6	
Never tested (<i>n</i> = 1797)	503	28.0	631	35.1	215	12.0	448	24.9	
Age									
≤ 31 years (<i>n</i> = 1947)	451	23.2	645	33.1	258	13.3	593	30.5	<0.001
> 31 years (<i>n</i> = 2128)	716	33.6	840	39.5	207	9.7	365	17.1	
Sexual orientation									
Gay (<i>n</i> = 3431)	1001	29.2	1254	36.5	371	10.8	805	23.5	0.1
Bisexual (<i>n</i> = 606)	154	25.4	223	36.8	87	14.4	142	23.4	
All men (<i>n</i> = 4078)	1168	28.6	1486	36.4	466	11.4	958	23.5	

Due to missing values, column numbers do not always add up to total *n*.

*HIV positive versus HIV negative men; HIV-positive versus never-tested men; HIV-negative versus never-tested men no significant difference.

orientation (gay or bisexual) (*p* > 0.1). In multivariate analysis, HIV-positive status, older age and high-risk sexual behaviour were all independently associated with using the Internet more frequently to look for sex (*p* < 0.05).

Preferences

Nearly half the men (47%) said they preferred meeting male sexual partners through the Internet. The remainder either said they preferred traditional ‘offline’ meeting places such as bars and clubs (17%) or expressed no preference (36%) either way. Never-tested men were more likely to say they preferred meeting male sexual partners through the Internet (53%)

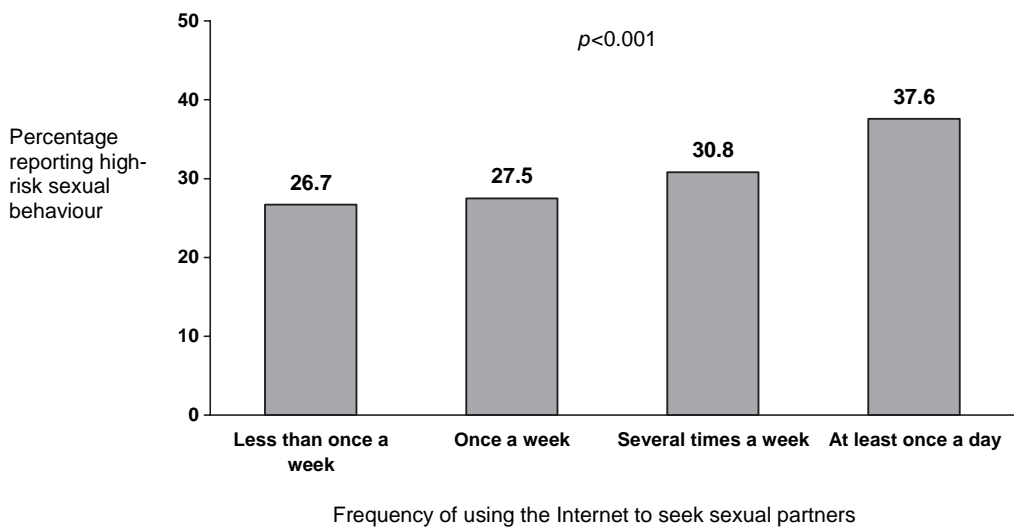


FIG. 1. High-risk sexual behaviour by frequency of using the Internet to seek sexual partners.

than HIV-positive (47%) or HIV-negative men (42%) ($p < 0.001$). Bisexual men were also more likely to express a preference for the Internet (70% versus 43%, $p < 0.001$), as were older men (52% versus 42%, $p < 0.001$).

In multivariate analysis having never-tested for HIV, being bisexual, older age and high-risk sexual behaviour were all independently associated with preferring to meet sexual partners through the Internet ($p < 0.01$).

Reasons for using chat-rooms

Most men gave more than one reason for using Internet chat-rooms (median number of reasons = 4). More than half the men said they used chat-rooms to find sexual partners, because they were bored, they found it entertaining/exciting or to have contact with others (Table 2). Many said they were looking for men who wanted the same kind of sex as themselves. Approximately a quarter of the men said they used them because they were anonymous, they did not have to leave the house, it was a safe place to cruise or because they were lonely. Less than one in five said they were addicted to chat-rooms, while a minority said it was their only way to meet other men (Table 2). Of the 'other reasons' given, the most common were using chat-rooms to make contact with existing friends or sexual partners, because it was easy and cheaper than the telephone, to look for a relationship, make new friends, cybersex or voyeurism.

The *most important* reason for using chat-rooms followed a similar pattern (Table 2). The most important reason was to find sexual partners (38%), followed by having contact with others (17%), being bored (16%) or finding it entertaining/exciting (12%). Relatively few men said their most important reason was because they were lonely, were addicted to chat-rooms or that chat-rooms were anonymous, safe or their only way to meet other men.

Table 2. *Reasons for using chat-rooms*

	Reasons* (N = 4,869)		The most important reason (N = 4,869)	
	n	%	n	%
To find sexual partners	2883	59.2	1433	29.4**
To find men who like the same kind of sex	1991	40.9	388	8.0**
To look for anal sex without a condom	241	4.9	51	1.0**
It's entertaining/exciting	2709	55.6	602	12.4
To have contact with others	2716	55.8	801	16.5
Bored	2813	57.8	784	16.1
Lonely	1055	21.7	187	3.8
It's a safe place to cruise	1097	22.5	80	1.6
It's anonymous	1387	28.5	91	1.9
Did not have to leave the house	1283	26.4	78	1.6
Addicted to it	820	16.8	143	2.9
Only way to meet other men	372	7.6	84	1.7
To look for men with same HIV status	213	4.4	22	0.5
Other***	396	8.1	125	2.6

*Men could give more than one reason for using chat-rooms; **these were combined into one category of using the Internet to find sexual partners; ***some common 'other' reasons were to chat to existing friends/partners because the chat-room offers a convenient and cheap way to do this. Also to find relationship partners and for cybersex/voyeurism.

HIV-positive men were more likely than other men to say that the most important reason for using chat-rooms was to find sexual partners (47% versus 38%, $p < 0.01$). Older men were also more likely to give this as the most important reason (45% versus 32%, $p < 0.001$) as did bisexual men (38% versus 28%, $p < 0.01$) and men living in London (43% versus 37%, $p < 0.001$). Those men who said the most important reason for using chat-rooms was to find sexual partners were also more likely to report high-risk sexual behaviour (40% versus 32%, $p < 0.001$).

In multivariate analysis HIV-positive status, older age, being bisexual, living in London and high-risk sexual behaviour were all independently associated with having used chat-rooms primarily to look for sex ($p < 0.01$).

Attitudes to online health promotion

Three-quarters (75%) of the men said they thought Internet sites should allow health workers into chat-rooms, the majority (84%) said that if they met a health worker in a chat-room they would find out what they had to say, while 78% said they would click on a banner to find out about sexual health.

The majority of men, regardless of HIV status, age, where they lived or whether they had engaged in sexual risk behaviour, said that health workers *should* be allowed into chat-rooms. However, there were small but significant differences by HIV status (HIV-positive men, 63%; HIV-negative men, 74%; never-tested men, 78%, $p < 0.001$), age (older men, 72% versus younger men, 78%, $p < 0.001$) and residence (London men, 71% versus outside London, 76%, $p < 0.001$). In addition, men who said health workers should be allowed into chat-rooms were *less* likely to report high-risk sexual behaviour than other men (34% versus 39%, $p < 0.001$). In multivariate analysis, HIV-positive status, older age, living in London and high-risk sexual behaviour were all independently associated with *not* allowing health workers into chat-rooms ($p < 0.05$).

A similar pattern emerged when men were asked about their intention to engage with a health worker in a chat-room. While the majority of men said they *would* find out what a health worker had to say, there were small but statistically significant differences by HIV status (HIV-positive men, 76%; HIV-negative men, 83%; never-tested men, 86%, $p < 0.001$), age (older men, 82% versus younger men, 86%, $p < 0.001$) and residence (London men, 79% versus outside London, 86%, $p < 0.001$). Men who would find out what a health worker had to say were *less* likely to report high-risk sexual behaviour (34% versus 41%, $p = 0.001$). In multivariate analysis, being HIV-positive, older age, living in London and high-risk sexual behaviour were all independently associated with *not* finding out what a health worker had to say ($p < 0.01$).

The proportion of men who would click on a banner to find out about sexual health did not differ by HIV status, age, sexual orientation, place of residence or sexual risk behaviour.

Discussion

In this sample of almost 5,000 men surveyed via popular gay UK Internet sites in 2002, nearly everyone had used chat-rooms and the vast majority had used these sites to look for sexual partners in the previous year. For many men, this was a popular way of seeking sexual partners and one they had been using for some time. While most men used these sites to meet other men for sex, other reasons were also given for visiting chat-rooms. These were

predominantly social (e.g. to have contact with others) or for entertainment (e.g. to relieve boredom). We found that attitudes towards online health promotion were broadly favourable.

In multivariate analysis clear differences emerged by HIV status, age, sexual orientation and sexual risk behaviour in the frequency of Internet use and reasons for use. HIV-positive men were more frequent Internet sex seekers and gave sex as the most important reason for using the Internet more often than other men.

A similar pattern was seen for older men. They used the Internet to look for sex more frequently than younger men and were more likely to give sex as their primary reason for using chat-rooms. They also preferred to meet men through the Internet rather than offline, in bars or clubs. Men who described themselves as bisexual were more likely than gay men to say they preferred to meet men through the Internet and to use the Internet to seek sexual partners. Since bisexual or older men may not go to gay bars and clubs as frequently as other men (Dodds & Mercey, 2002), the Internet offers an important opportunity for reaching these groups.

Men who used the Internet most frequently or who used it mainly to meet sexual partners were also more likely to report high-risk sexual behaviour. Clearly the Internet provides a valuable opportunity of engaging such high-risk men with online HIV/STI prevention (Ross, 2002; Ross *et al.*, 2000).

The majority of the men surveyed had favourable attitudes towards online health promotion. The challenge for online interventions will be to adopt innovative and effective approaches that take advantage of these favourable attitudes. HIV-positive men, older men and those reporting high-risk sexual behaviour were less likely than other men to view online health promotion favourably. These differentials were small, however. At a programme level, therefore, it would be unrealistic to expect online HIV prevention interventions to target men by age, HIV status or risk behaviour based on the small (though statistically significant) differences reported here.

Further research into the pros and cons of different online methods of health promotion is clearly needed so we can reach diverse audiences. The parallel qualitative arm of this study (Davis *et al.*, submitted) will shed further light on men's reasons for using the Internet and their online communication practices.

Strengths and weaknesses

All convenience samples raise questions as to how representative they are. Internet sampling methods may exacerbate this problem as only a minority of men will have clicked on a banner or pop-up and completed a questionnaire (probably less than 1% of all users during the survey period) (Couper, 2001; Rhodes *et al.*, 2002). The question of how representative these men are of all MSM using these Internet sites must therefore be raised.

For this online survey men were recruited from two Internet sites only—gaydar and gay.com. These are the two most popular gay Internet sites in the UK and are likely to account for more online meetings and overall exposure to risk than other sites that cater for a minority of men with specific sexual interests. There is also evidence that the men we surveyed online were at increased sexual risk. In a separate analysis we compared the characteristics of the London men in the 2002 online survey with those of a community sample also surveyed in London in the same year (Elford *et al.*, 2004b). Compared with the community sample, the men who completed the questionnaire online reported elevated levels of high-risk sexual behaviour.

A strength of the sample is that it was large and drawn from a wide geographic area. The proportion of men in the online survey who had ever tested for HIV was similar to that found

in other UK national samples (Hickson *et al.*, 2003). The proportion of HIV-positive men was also similar to the estimated proportion of gay men who are infected with HIV in the UK (Health Protection Agency, Scottish Centre for Infection and Environmental Health & Institute of Child Health, 2004).

The meanings attached to some of the reasons for using the Internet may have varied by respondent. For example, 'The Internet is a safe place to cruise' referred to physical safety, relative to the danger of homophobic attack when looking for sex in public conveniences or outdoor cruising areas. It is possible that some of the respondents read this statement to mean that the men they met online would practise safer sex or that they would not be discovered. Such ambiguities were unavoidable and the limitations they introduce to the study are recognized.

In terms of health promotion, the degree to which answers to attitudinal questions predict behaviour is unknown and the results should therefore be treated with due caution. It may be that while the majority of men said they would talk to a health worker in a chat-room, fewer men may do so if they were actually approached. Further research is needed to evaluate behavioural outcomes following such interventions. Nonetheless, the favourable attitudes seen here are encouraging. Future interventions will need to assess acceptability, uptake and efficacy in pilot studies delivered via the Internet.

Conclusion

This online survey of nearly 5,000 MSM furthers our understanding of how and why MSM use the Internet to seek sexual partners. Our findings illuminate men's reasons for using chat-rooms and show that these are not only sexual; indeed, for some men they may be important places for making contact with other men at a social level. The data also reveal a favourable attitude towards online health promotion that endorses the work of those who are currently developing web-based interventions (Bull *et al.*, 2003; Davidovich & de Wit, 2003). The Internet has clearly emerged as an important meeting place for men who have sex with men. As a consequence it offers considerable potential as a forum for addressing sexual risk behaviours for HIV and STI transmission.

Acknowledgements

This research was funded by the UK Medical Research Council (grant number GO 100159). The authors would like to thank gaydar and gay.com for promoting the online survey as well as providing technical support and the many men who took the time to complete the online questionnaire.

References

- BOLDING, G., ELDFORD, J. & SHERR, L. (2002). Survey 2002: behavioural surveillance among gay men in London gyms. London: City University. (http://www.city.ac.uk/barts/gymsurvey/pdf/gym_survey.pdf).
- BOLDING, G., ELDFORD, J., SHERR, L. & HART, G. (2003). *Survey 2003: behavioural surveillance among gay men using inner London gyms*. London: City University.
- BULL, S., LLOYD, L., RIETMEIJER, C. & MCFARLANE, M. (2003). Recruitment and retention of participants for randomized controlled trials online: the experience of the Smart Sex Quest project. Paper presented at the CDC conference on STD/HIV Prevention and the Internet, Washington DC.
- BULL, S., MCFARLANE, M. & RIETMEIJER, C. (2001). HIV and sexually transmitted infection risk behaviors among men seeking sex with men on-line. *American Journal of Public Health*, 91 (6), 988–989.
- COUPER, M. (2001). *The promises and perils of web surveys*. London: Association for Survey Computing.

- DAVIDOVICH, U. & DE WIT, J. (2003). The efficacy of an online intervention for promoting safer sex in steady male relationships—a randomized controlled trial. Paper presented at the CDC conference on STD/HIV Prevention and the Internet, Washington DC.
- DAVIS, M., HART, G., BOLDING, G., SHERR, L. & ELFORD, J. (submitted). HIV risk and the Internet: qualitative perspectives on the cyber-mediated sexual networking of gay men in London.
- DODDS J.P. & MERCEY, D. (2002). London Gay Men's Survey: 2001 results. London: Department of Sexually Transmitted Diseases, Royal Free and University College Medical School.
- ELFORD, J., BOLDING, G. & SHERR, L. (2001). Seeking sex on the Internet and sexual risk behavior among gay men using London gyms. *AIDS*, 15, 1409–1415.
- ELFORD, J., BOLDING, G., DAVIS, M., SHERR, L. & HART, G. (2004a). The Internet and HIV; design, methods and sample characteristics. *BMC Public Health*, 4, 39. See <http://www.biomedcentral.com/bmcpubhealth>
- ELFORD, J., BOLDING, G., DAVIS, M., SHERR, L. & HART, G. (2004b). Web-based behavioral surveillance among men who have sex with men: a comparison of online and offline samples in London, UK. *Journal of Acquired Immune Deficiency Syndromes*, 35 (3), 421–426.
- HEALTH PROTECTION AGENCY SCOTTISH CENTRE FOR INFECTION AND ENVIRONMENTAL HEALTH & INSTITUTE OF CHILD HEALTH (2004). AIDS/HIV quarterly surveillance tables. Cumulative UK data to end December 2003, 61: 03/4.
- HICKSON, F., WEATHERBURN, P., REID, D. & STEPHENS, M. (2003). *Out and about: findings from the United Kingdom Gay Men's Sex Survey 2002*. London: Sigma Research.
- HOSPERS, H., HARTERINK, P., VAN DEN HOEK, K. & VEENSTRA, J. (2002). Chatters on the Internet: a special target group for HIV prevention. *AIDS Care*, 14 (4), 539–544.
- KIM, A., KENT, C., MCFARLAND, W. & KLAUSNER, J. (2001). Cruising the Internet highway. *Journal of Acquired Immune Deficiency Syndromes*, 28, 89–93.
- KLAUSNER, J., WOLF, W., FISCHER-PONCE, L., ZOLT, I. & KATZ, M. (2000). Tracing a syphilis outbreak through cyberspace. *Journal of the American Medical Association*, 28 (4), 447–449.
- MCFARLANE, M., BULL, S. & RIETMEIJER, C. (2000). The Internet as a newly emerging risk environment for sexually transmitted diseases. *Journal of the American Medical Association*, 284 (4), 443–446.
- RHODES, S., BOWIE, D. & HERGENRATHER, K. (2002). Collecting behavioral data using the world wide web: considerations for researchers. *Journal of Epidemiological Community Health*, 17, 4–6.
- ROSS, M. (2002). The Internet as a medium for HIV prevention and counselling. *Focus: A Guide to AIDS Research and Counselling*, 17 (5), 4–6.
- ROSS, M., TIKKANEN, R. & MANSON, S. (2000). Differences between Internet samples and conventional samples of men who have sex with men: implications for research and HIV interventions. *Social Science and Medicine*, 51, 749–758.