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## The Internet as a source of information about sexuality

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To use the Internet for sex educational purposes and for sex information has been recognised by prior research as benefits of the technological development and important areas to investigate, but few empirical studies have so far been conducted. The purpose of this study was to identify those who use the Internet to seek information about sexual issues and to examine the reasons for using the Internet for this purpose. A total of 1913 respondents completed an online Swedish questionnaire about Internet sexuality and the 1614 who reported using the Internet for sexual purposes were selected for analysis in the current study. More than one-half of these respondents claimed to use the Internet to seek information about sexual issues. The results showed that men and women of all ages used the Internet for this purpose, suggesting that the need for sexual education persists even in the adult years. The reasons for seeking information were primarily to get knowledge about the body, about how to have sex, and out of curiosity. Knowing who seeks information about sexuality on the Internet and the reasons why may be helpful in identifying the needs of different groups of individuals as well as tailoring the information provided, both online and offline.

**Keywords:** Internet; sexuality; sex education; survey; Sweden

### Introduction

It is now well known that the Internet is used for a number of sexual activities (Ross 2005; Daneback 2006; Döring 2009). Prior research has emphasised various online sexual activities such as viewing pornographic pictures and movies (Daneback, Ross, and Månsson 2006; Træen, Nielsen, and Stigum 2006), cybersex (Daneback, Cooper, and Månsson 2005), sex dating (Daneback, Månsson, and Ross 2007; Sevcikova and Daneback 2010), and seeking knowledge about sexual issues (Daneback and Löfberg 2011). In addition, efforts have been made to identify characteristics and behaviours of those using the Internet for sexual purposes (e.g. Cooper et al. 2002). In this vein, much focus has been placed on specific subgroups such as adolescents and students (e.g. Boies, Knudson, and Young 2004; Peter and Valkenburg 2008; Löfgren-Mårtenson and Månsson 2010; Shaughnessy, Byers, and Walsh 2010), men who have sex with men (e.g. Davis et al. 2006; Ross et al. 2007), bisexual men and women (Daneback, Ross, and Månsson 2008) and sexual compulsives (Daneback, Ross, and Månsson 2006). A substantial part of the prior research deals with the possible effects or outcomes of using the Internet in terms of sexually transmitted infection/HIV transmission (McFarlane, Bull, and Rietmeijer 2002), sexual compulsivity (Delmonico and Miller 2003), sexual solicitation and harassment (Mitchell, Finkelhor, and Wolak 2007), and infidelity (Whitty 2005).

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In the mid-1990s, when the field of Internet sexuality was established, researchers pointed to the possible benefits of the newly emerged technology as well as the potential hazards (Cooper and Sportolari 1997; Cooper 1998). However, much of the research available in the field so far has focused on the negative and problematic aspects of using the Internet for sexual purposes (Döring 2009) and less on sexual lust, sexual health, sexual joy, and sexual knowledge. To use the Internet for sex educational purposes and to use the Internet for sex information were two emphasised areas, but both have remained under-researched (Cooper, McLoughlin, and Campbell 2000). Of the available studies, some of them focus on the Internet as an effective means of disseminating information about sexual issues in comparison with more traditional methods; for example, regarding sexually transmitted infection/HIV and birth control. Other studies focus on how the Internet could be used for changing attitudes and increasing knowledge through online interventions as well as through online therapy (e.g., Rietmeijer and Shamos 2007). A few studies have examined the quality of the information available on the Web (Li et al. 2006). Many studies on sex education online have revolved around a professional perspective and less focus has been on individual use of the Internet for this purpose. Thus, we have limited knowledge not only regarding the number of people using the Internet to gain knowledge about sexual issues, but also how, where, and why they have gone online to learn about sex and sexuality. Furthermore, we know little about what information and knowledge they look for.

Although population-based figures are lacking, we know that the Internet serves as a source of sexual information for people. The results from one of the first large-scale studies on Internet sexuality showed that 55% of women and 31% of men used the Internet for sex educational purposes (Cooper et al. 2002). In a Canadian college sample comprising 760 students it was found that 45% of women and 68% of men had searched for sex information during the past year (Boies 2002). In a Swedish study the corresponding figures were 24% versus 15%, respectively. However, this was for ages 18–75; for respondents aged 18–24 the percentages increased to 33% versus 20% for women and men respectively (Cooper et al. 2003). The results from the Swedish study suggest that using the Internet to look for information about sex is more common at younger ages than at older ages. However, this may be related to the fact that younger people use the Internet to a greater extent than older people. It has been suggested that sexual orientation influences the sexual activities engaged in on the Internet. For example, bisexual men and women have been found to use the Internet to look for information about sexuality to a greater extent than heterosexual men and women (Daneback, Ross, and Månsson 2008).

Daneback and Löfberg (2011) have shown that young people use the Internet to gain knowledge about their bodies and sexual identity. For example, they want to know about their bodily functions, if they are normal compared with peers, how to shave their genitals, and what it is like to be homosexual. Ross and Kauth (2002) suggested that the Internet may serve as a practice ground for gay men in their coming-out processes. Young people are also interested in more technically-oriented questions about sexuality; how to engage in various sexual acts such as having oral sex, vaginal sex, and anal sex, as well as how to use sex toys (Daneback and Löfberg 2011).

Information about sexuality can be found on dedicated professional websites, but can also be part of discussions in online fora where the users create the content themselves. Moreover, a recent study showed that 21% of women and 23% of men aged 18–24 viewed pornography to gain knowledge about sexuality (Daneback and Månsson 2009). In their qualitative study of adolescents' perceptions and experience with pornography on the Internet, Löfgren-Mårtenson and Månsson (2010) also found that even though the content

of the pornography was usually described as rather violent and rough, some of its substance also functioned as a source of information for the young people. This suggests that seeking information on the Internet may be interactive as well as non-interactive, provided through text and images. On the other hand, prior research has shown that pornography is not a primary source of information about sexuality in a sample of college students. However, the students reported media as their second source of information, following peers. The knowledge they got from pornography primarily revolved around sexual practices (Trostle 2003).

As mentioned above, Daneback and Löfberg (2011) suggested that the Internet makes it possible to express thoughts, experiences and questions about sex and sexuality that are not culturally or sociably acceptable offline. Furthermore, it is possible to extend knowledge beyond what is locally available in terms of how and with whom it is possible and/or permissible to discuss sexual issues. This interpretation relates to the theoretical idea of sexual scripts as proposed by Gagnon and Simon (2005). The sexual scripts can be seen as manuscripts guiding individual, interpersonal, and cultural sexual behaviour; what is acceptable and unacceptable conduct.

The aim of this study was to expand upon the current knowledge about using the Internet to gain knowledge in sexual issues. More specifically, we aimed to identify those who use the Internet to seek information about sexuality based on socio-demographic variables (age, gender, relationship status), sexual behaviour offline (intercourse frequency and masturbation frequency) and online sexual behaviour (reading erotic novels, viewing pornography, chatting about sex with others, shopping for sex products, flirting, looking for romantic partners, looking for sex partners, as well as experience of cybersex and experience meeting sex partners from the Internet). In addition, we aimed to examine the reasons for using the Internet to seek information about sexual issues.

## Methods

### *Procedure*

The web questionnaire was administered in the Swedish language on four sites: three public-domain websites and a Swedish university. Two websites were portal sites oriented toward adults, presenting information from diverse sources and including various applications (such as email) with one leaning more towards online dating. The third website was an explicit youth community website, one of the two largest in Sweden for 16–29-year-olds. The sites were *passagen.se* with approximately 500,000 unique visitors per week, *spray.se* with approximately 400,000 unique visitors, and *playahead.se* with approximately 100,000 unique visitors per week. The size of the university was over 20,000 students.

Between 27 February and 8 March 2009 a banner was placed on the *passagen.se* and *spray.se* web portal sites, which was visible at all times for all visitors to that site. The banner stated: 'Participate in a study on love and sex on the Internet'. On 11 March, an email was sent to all active student email addresses registered at the university, briefly describing the study including a hyperlink to the web questionnaire. Finally, on 18 March, a similar email message was randomly sent to 10,000 members 18 years or older of the *playahead.se* community by the website administrators. Data collection ended on 20 March 2009.

By clicking the banner adverts or the hyperlink, the respondents were linked to an introduction webpage located on a server owned by the web survey company, Entergate. The introduction page had the university logo (visible throughout the questionnaire) and

described the study, questions related to ethics and confidentiality, the number of questions and the estimated time it would take to complete the questionnaire. The respondents were also informed that participation was voluntary but limited to people aged 18 and older. The introduction page included links to the researchers' profile pages on the university website, which in turn included contact details. At the bottom of the introduction page the respondents were asked to click the 'continue button' if they had read through the information, were aged 18 or older, and agreed to participate in the study. By clicking the button the respondents were linked to the questionnaire hosted on Entergate's server.

The web questionnaire comprised a total of 85 questions. However, by using skip patterns we were able to personalise the questions to some extent. This reduced the number of questions to 51 for some respondents. Each respondent opened a session on the server and responses were recorded on the server subsequently with the possibility of revising answers (i.e., the respondents could go back and forth in the questionnaire before finally submitting it). Due to the format and technique used, we were able to identify those who dropped out from the questionnaire before completion. A total of 4637 respondents began to fill out the questionnaire and 1913 completed it, meaning an internal drop-out rate of 58%. The drop-out rate is consistent with the findings of an earlier Swedish Internet sexuality study using a web questionnaire (Ross et al. 2003). These participants will be the subject of further analyses but they were dropped for the purposes of the current study, which comprised only completed questionnaires. Ross et al. (2003) have described the biases associated with non-completion in web surveys.

When the respondents had finished or quit the questionnaire, the session was shut down. Those who completed their questionnaire were linked to a webpage thanking them for their participation and giving encouragement to contact the researchers if they would have any questions. Finally, they were linked to the research programme's website.

### ***Instrument***

The instrument was based on an earlier instrument that was used in a similar study in 2002 (see Cooper et al. 2003) but revised and expanded. The questionnaire comprised 85 questions divided into six subsections. The first section had 24 socio-demographic questions including items on Internet access, various forms of relationship constellations, love, and sexuality. Section Two had 28 questions about love and sexual activities on the Internet, focusing on what sexual activities the respondents engage in on the Internet, how frequently (daily, weekly, monthly, annually or never), and reasons for engaging in these activities. Section Three comprised 11 questions of sexual exposure and sexual exploitation. The fourth section had six questions about sexual activities in exchange for money or goods (attitudes and experiences). Section Five had six questions about positive and negative experiences from using the Internet for love and sexual purposes. The sixth section comprised 10 questions on online sexual problems (i.e. loss of control, addiction to online sex, sexually transmitted infections and HIV). Before submission, the respondents were provided with the possibility of commenting on the questionnaire in an open-ended question (text box).

### ***Sample***

The sample participating in this study came from the population who visited the *passagen.se* and *spray.se* web portals during the time of the study, those who were

members of the playahead web community by 18 March 2009, and those who were enrolled in the university in the spring semester of the 2009 Swedish academic year.

A total of 1913 respondents completed the questionnaire. The majority of the respondents were recruited from the university ( $n = 955$ ), and from the playahead.se web community ( $n = 580$ ). The numbers recruited from spray.se and passagen.se were 273 and 105 respondents, respectively.

The sample comprised 66% women and 34% men. However, the distribution differed depending on site of recruitment (university, 78% women vs. 22% men; playahead.se, 50% women vs. 50% men; spray.se, 63% women vs. 37% men; passagen.se, 42% women vs. 58% men). The mean age for women was 28 years and for men 29 years and also differed depending on site of recruitment (university, 29 years for both sexes; playahead.se, 20 years for women vs. 21 years for men; spray.se, 37 years for women vs. 43 years for men; passagen.se, 36 years for women vs. 46 years for men). Approximately 1% of respondents claimed to be from a country outside Sweden.

In this study, only those who reported using the Internet for sexual purposes were included ( $n = 1614$ ), 62% women and 38% men. Using the Internet for sexual purposes was defined as reporting experience of, regardless of frequency, one or more of the following online sexual activities: reading erotic novels; viewing pornography; chatting about sex; seeking information about sexual issues; buying sex products; flirting; seeking romantic partners; seeking sex partners; having met partners online for offline sex; having had cybersex.

### Data analysis

All data were analysed with SPSS version 17. We aimed to identify those who used the Internet to seek information about sexual issues. In the questionnaire, the respondents were able to report how frequently they used the Internet for this purpose, but due to the highly right-skewed distribution, the variable was re-coded into a dichotomous variable where zero = have not used the Internet to seek information about sexual issues and one = have used the Internet to seek information about sexual issues. This was the dependent variable. To identify groups (dependent variable) we used two multivariate binary logistic regression models, one for women and one for men, in which we had included a set of pre-determined predictors (independent variables). The independent variables were entered into the model and covered three areas: *socio-demographic variables* – age (age groups: 18–24; 25–34; 35–49; 50–65), place of birth (Sweden or abroad), relationship status (in a relationship or not in a relationship), and sexual orientation (based on sexual experience: heterosexual; homosexual; bisexual); *offline sexual behaviour* – frequency of having sex in the last 12 months (daily, weekly, monthly, rarely, not in last 12 months) and frequency of masturbation (daily, weekly, monthly, rarely, never masturbate); and *online sexual behaviour* – reading erotic novels, viewing pornography, chatting about sex, buying sex products, flirting, seeking romantic partners, seeking sex partners, having met partners online for offline sex, having had cybersex.

In the current study, we also aimed to examine the reasons as to why the Internet was used to seek information about sexual issues. Factor analysis (principal components analysis with varimax rotation) was performed on the reasons for using the Internet to find any underlying dimensions. Each factor was scored where one = checked that category. Three potential factors were identified: the first factor included four categories and the remaining two factors had three categories each, with a possible score range of zero to four and zero to three, respectively. In addition, we aimed to examine variables that were

associated with each of the factors. However, due to their right-skewed distribution, both linear and ordinal regression were inappropriate and thus the factors were re-coded into binary variables where zero = no category checked and one = one to four (one to three) categories checked. One multivariate logistic regression model was built for each of the three groups (dependent variables) and included a set of predetermined predictor variables (independent variables). These were organised around: *socio-demographic variables* – age (age groups: 18–24; 25–34; 35–49; 50–65), place of birth (Sweden or abroad), relationship status (in a relationship or not in a relationship), and sexual orientation (based on sexual experience: heterosexual; homosexual; bisexual); and *offline sexual behaviour* – frequency of having sex (daily, weekly, monthly, rarely, not in last 12 months) and frequency of masturbation (daily, weekly, monthly, rarely, never masturbate).

The effects for the multivariate logistic regression analyses are expressed in odds ratios (OR) where values above one indicate increased effects and values below one indicate decreased effects.

## Results

A total of 1598 respondents answered the question about whether they used the Internet to seek information about sexual issues. Overall, more than one-half reported having used the Internet for this purpose (Table 1). Among women this varied slightly across the age groups, with the highest percentage among women aged 25–34 years (68%) and the lowest among women aged 35–49 years (45%). For men, the percentages were more stable at around 50% for all age groups.

Table 2 displays the results of the multivariate logistic regression analysis. The Hosmer and Lemeshow goodness of fit was non-significant for both models (women  $p = 0.547$ ; men  $p = 0.609$ ), indicating that the models adequately fitted the data. The results indicated for women that age, place of birth and online sexual activity were significantly associated with seeking information about sexuality online, while for men online sexual activities was the only significant association. Women aged 25–34 were significantly more likely to seek information about sexuality on the Internet (OR = 1.42) while women aged 35–49 were less likely to do so (OR = 0.54) compared with women aged 18–24. Compared with those women born in Sweden, foreign-born women were less likely to seek information about sexuality online (OR = 0.56). In addition, women who used the Internet to seek sex partners (OR = 1.85) and who had had sex with partners they had met on the Internet (OR = 1.49) were more likely to seek information about sexuality online. Among the men, those who read erotic novels (OR = 2.45) and who chatted about sex online (OR = 2.18) were more likely to seek information about sexuality online than men who had not engaged in these activities.

The three most commonly endorsed reasons to use the Internet to seek for information about sexuality were ‘to get knowledge of my body’, ‘to get knowledge about how to have sex’, and ‘because of curiosity about sex’ (Table 3). Interestingly, among women aged 35–49 and 50–65 the greatest proportion reported curiosity as their reason to seek information about sexuality online, followed by knowledge about how to have sex and knowledge about their body. In comparison, knowledge about their body was the reason reported by the largest proportion of women aged 18–24 and 25–34. There was clearly a generational aspect involved as a larger proportion of the younger respondents aged 18–24 and 25–34 reported all three reasons compared with those aged 35–49 and 50–65. For men, regardless of age, curiosity was the number one reason followed by knowledge about how to have sex. For the youngest and the oldest age groups, knowledge about their body

Table 1. Percentage of participants who sought information about sexuality online by sex and age ( $n = 1598$ ).

	Women					Men		
	18-24 ( $n = 533$ )	25-34 ( $n = 280$ )	35-49 ( $n = 156$ )	50-65 ( $n = 32$ )	18-24 ( $n = 320$ )	25-34 ( $n = 156$ )	35-49 ( $n = 79$ )	50-65 ( $n = 42$ )
Yes	57	68	45	53	51	55	49	55
No	43	32	55	47	49	45	51	45



Table 2. Factors associated with seeking information about sexuality online: multivariate logistic regression ( $n = 1499$ ).

	Women				Men			
	OR	95% CI		<i>p</i>	OR	95% CI		<i>p</i>
		Lower	Upper			Lower	Upper	
<b>Age</b>								
18–24 (ref.)	1				1			
25–34	1.42	1.01	1.99	0.039	1.42	0.91	2.24	ns
35–49	0.54	0.36	0.81	0.003	1.03	0.57	1.87	ns
50–65	0.87	0.40	1.91	ns	1.41	0.69	2.98	ns
<b>Place of birth</b>								
Sweden (ref.)	1				1			
Abroad	0.56	0.34	0.94	0.027	1.41	0.80	2.49	ns
<b>Relationship status</b>								
In a relationship (ref.)	1				1			
No relationship	1.03	0.88	1.85	ns	1.38	0.86	2.20	ns
<b>Sexual orientation</b>								
Heterosexual (ref.)	1				1			
Homosexual	0.88	0.27	2.84	ns	0.95	0.32	2.85	ns
Bisexual	1.03	0.71	1.49	ns	0.76	0.37	1.60	ns
<b>Frequency of having sex (last 12 months)</b>								
Daily (ref.)	1				1			
Weekly	1.56	0.85	2.88	ns	1.04	0.51	2.14	ns
Monthly	1.30	0.69	2.44	ns	0.78	0.38	1.60	ns
Rarely	1.35	0.68	2.68	ns	1.18	0.54	2.58	ns
No sex	0.82	0.35	1.93	ns	1.28	0.52	3.19	ns
<b>Frequency of masturbation</b>								
Daily (ref.)	1				1			
Weekly	0.97	0.46	2.03	ns	1.13	0.71	1.80	ns
Monthly	0.91	0.43	1.92	ns	1.39	0.77	2.51	ns
Rarely	0.74	0.35	1.59	ns	1.24	0.61	2.52	ns
Never masturbate	0.71	0.30	1.59	ns	0.85	0.24	2.96	ns
<b>Online sexual activities</b>								
Read erotic novels	1.89	0.89	1.59	ns	2.45	1.69	3.56	0.001
View pornography	0.99	0.73	1.34	ns	1.20	0.67	2.15	ns
Chat about sex	0.74	0.51	1.06	ns	2.18	1.36	3.50	0.001
Buy sex products	0.92	0.68	1.25	ns	1.33	0.87	2.02	ns
Flirt	0.71	0.49	1.02	ns	1.01	0.61	1.66	ns
Seek romantic partner	1.16	0.76	1.76	ns	1.11	0.70	1.77	ns
Seek sex partner	1.85	1.06	3.25	0.031	1.27	0.76	1.98	ns
Have offline sex	1.49	1.10	2.02	0.011	0.98	0.63	1.50	ns
Have cybersex	0.72	0.51	1.03	ns	1.15	0.71	1.86	ns

Notes: CI, confidence interval; ns, not significant.

was the third most reported reason, while for the two middle-aged groups it was anonymity. The age differences for men were more subtle and inconsistent compared with the age differences for women. There was a slight tendency that seeking information about sexuality to become sexually aroused increased with age for both men and women. It is also noteworthy that 10% of the men aged 50–65 reported that they did not have anyone to talk to about sex, but the sample size was small for this age group. In addition, 14% of young males (aged 18–24) claimed to seek information about sexuality to compare themselves with others.

Table 3. Reasons to seek information about sexuality online (%) by sex and age ( $n = 1600$ ).

	Women					Men				
	18–24 ( $n = 534$ )	25–34 ( $n = 281$ )	35–49 ( $n = 156$ )	50–65 ( $n = 32$ )	18–24 ( $n = 320$ )	25–34 ( $n = 156$ )	35–49 ( $n = 79$ )	50–65 ( $n = 42$ )		
Not wanting to talk about sex with others offline	3	1	2	0	8	6	4	2		
Not having others to talk about sex with offline	2	2	2	3	5	6	4	10		
May be anonymous online	15	13	11	13	17	22	17	7		
To get knowledge about body	35	38	15	13	25	21	8	17		
To find out if functioning normally	17	15	8	6	18	8	8	12		
To get knowledge about how to have sex	29	29	18	16	30	26	25	27		
To become sexually aroused	2	5	5	6	7	8	9	10		
Because curious about sex	28	34	19	22	30	35	33	36		
Not daring to talk about certain sexual things offline	3	3	2	0	6	6	5	2		
To compare myself with others	8	8	6	0	14	6	9	0		

Table 4. Reasons to seek information about sexuality online: factor analysis.

Variable	Loading
Factor 1 – embarrassment	
Not wanting to talk about sex with others offline	0.74
Not having others to talk about sex with offline	0.73
Not daring to talk about certain sexual things offline	0.70
May be anonymous online	0.55
(Cronbach's $\alpha = 0.61$ ; 30.72% of variance)	
Factor 2 – knowledge	
To find out if functioning normally	0.83
To get knowledge about body	0.71
To compare myself with others	0.65
(Cronbach's $\alpha = 0.64$ ; 14.37% of variance)	
Factor 3 – curiosity	
Because curious about sex	0.77
To become sexually aroused	0.69
To get knowledge about how to have sex	0.63
(Cronbach's $\alpha = 0.58$ ; 10.93% of variance)	

To find possible underlying dimensions, the 10 reasons to use the Internet to seek information about sexuality were subjected to factor analysis (Table 4). Based on a Scree test, three factors were extracted explaining 56% of the variance. Factor 1 was labelled *Embarrassment* (Cronbach's  $\alpha = 0.61$ ), Factor 2 was labelled *Knowledge* (Cronbach's  $\alpha = 0.64$ ), and Factor 3 was labelled *Curiosity* (Cronbach's  $\alpha = 0.58$ ).

Table 5 shows the results of the multivariate logistic regression models for each dimension found in the factor analysis. The Hosmer and Lemeshow goodness of fit was non-significant for all three reasons (*Embarrassment*,  $p = 0.913$ ; *Knowledge*,  $p = 0.470$ ; *Curiosity*,  $p = 0.999$ ), indicating that the models were adequately fitted to the data. The analysis showed that each reason was associated with different socio-demographic characteristics and offline sexual behaviours. *Embarrassment* was associated with gender and sexual behaviour, *Knowledge* was associated with gender, age, place of birth and sexual orientation, and *Curiosity* was associated with sexual orientation and sexual behaviour.

Men were more likely than women (OR = 1.55) to use the Internet to seek information about sexuality due to embarrassment. Those who had not had sex in the last 12 months (OR = 5.48) and those who had rarely had sex (OR = 3.60) were more likely to have sought information online due to embarrassment compared with those who had sex on a daily basis. Men were less likely than women (OR = 0.67) to use the Internet for reasons relating to knowledge. Similarly, those who were in the age groups 35–49 (OR = 0.29) and 50–65 (OR = 0.30) were less likely to use the Internet for reasons relating to knowledge compared with those aged 18–24, as were those who were foreign-born versus Swedish-born (OR = 0.42) and those who were bisexual (OR = 0.60) compared with heterosexual. Homosexuals were less likely than heterosexuals to report curiosity-related reasons. In addition, those who reported never masturbating or who rarely masturbated were less likely to use the Internet to seek information about sexuality for reasons related to curiosity compared to those who masturbated daily.

Table 5. Effect on odds depending on reason to seek information about sexuality online: multivariate logistic regression ( $n = 841$ ).

	Embarrassment				Knowledge				Curiosity			
	OR	95% CI		p	OR	95% CI		p	OR	95% CI		p
		Lower	Upper			Lower	Upper			Lower	Upper	
Sex	1				1				1			
Woman (ref.)	1.55	1.09	2.21	0.015	1	0.67	0.94	0.022	1.42	0.97	2.07	ns
Man												
Age	1				1				1			
18–24 (ref.)	0.91	0.64	1.29	ns	0.77	0.55	1.07	ns	0.89	0.63	1.26	ns
25–34	0.91	0.56	1.49	ns	0.29	0.18	0.46	0.001	1.08	0.65	1.78	ns
35–49	0.88	0.42	1.85	ns	0.30	0.15	0.60	0.001	0.76	0.37	1.57	ns
50–65												
Place of birth	1				1				1			
Sweden (ref.)	1.52	0.89	2.59	ns	0.42	0.25	0.70	0.001	1.09	0.67	1.78	ns
Abroad												
Relationship status	1				1				1			
In a relationship (ref.)	0.99	0.69	1.42	ns	0.83	0.59	1.16	ns	0.80	0.55	1.15	ns
No relationship												
Sexual orientation	1				1				1			
Heterosexual (ref.)	1.09	0.40	2.98	ns	0.62	0.23	1.67	ns	0.19	0.07	0.54	0.002
Homosexual	0.87	0.55	1.37	ns	0.60	0.40	0.91	0.015	0.71	0.71	0.46	ns
Bisexual												
Frequency of having sex (last 12 months)	1				1				1			
Daily (ref.)	2.03	0.94	4.41	ns	1.48	0.80	2.73	ns	0.72	0.34	1.52	ns
Weekly	1.93	0.88	4.22	ns	1.15	0.61	2.15	ns	0.68	0.32	1.46	ns
Monthly	3.60	1.59	8.18	0.002	1.64	0.82	3.27	ns	0.48	0.21	1.09	ns
Rarely	5.48	2.12	14.16	0.001	1.91	0.80	4.54	ns	0.40	0.15	1.07	ns
No sex												
Frequency of masturbation	1				1				1			
Daily (ref.)	0.86	0.51	1.42	ns	1.03	0.63	1.69	ns	0.62	0.33	1.15	ns
Weekly	0.91	0.52	1.59	ns	1.40	0.82	2.41	ns	0.58	0.30	1.11	ns
Monthly	0.77	0.42	1.41	ns	1.43	0.80	2.59	ns	0.37	0.19	0.74	0.005
Rarely	0.57	0.24	1.38	ns	1.12	0.51	2.43	ns	0.30	0.13	0.68	0.004
Never masturbate												

Notes: CI, confidence interval; ns, not significant.

## Discussion

The aim of this study was to expand upon our understanding of the use of the Internet to seek information about sexuality in a sample of respondents who use the Internet for sexual purposes. More specifically our aim was to identify users in terms of socio-demographic characteristics, sexual behaviour offline and sexual behaviour online. In addition, we aimed to examine the reasons as to why the Internet is used to seek information about sexuality.

In our sample, more than one-half of the respondents reported using the Internet to seek information about sexuality. This is in line with prior research on college students (Boies 2002) but the percentages were significantly higher compared with a US study comprising a more diverse sample (Cooper et al. 2003). Most probably, these figures have increased as Internet penetration has continued to increase. Nevertheless, it is worth noting that this study was conducted in Sweden, which has one of the longest traditions of mandated sex education in schools (since 1956). The results of this study suggest that the Internet constitutes a source of sexual knowledge for the majority of individuals in a sample of respondents who use the Internet for sexual purposes. However, randomised population-based data would be needed to generalise this finding to the public.

Our results showed that it is possible to discriminate between people who use the Internet to seek information about sexuality and those who engage in other kinds of online sexual activities. Interestingly, women aged 25–34 were more likely, and women aged 35–49 less likely, than women aged 18–24 to use the Internet for this purpose. Perhaps this indicates that the need for sex education persists even in the adult years. In their study on sexuality education opportunities at in-home sex-toy parties, Fisher et al. (2010) claim that little attention has been given to adult sexuality education outside educational settings and suggest that besides in-home sex-toy parties, which was the focus for their study, there may be other potential venues for adult sexuality education both offline and online.

Women who use the Internet to seek information about sexuality were also less likely to be foreign-born than Swedish-born. This could be related to cultural aspects where other sources are available, where the need is not persistent, or where women are not supposed (due to cultural proscriptions regarding sexuality in women) to seek information about sexuality. To date, ethnicity has not been extensively examined in studies on Internet sexuality and cross-cultural studies are scarce and should be considered in future research.

Engagement in online sexual activities was also associated with seeking information about sexuality online. Women who had sought sex partners online and who had had sex with someone they had met online were more likely to seek online information about sexuality than women who had not engaged in these behaviours. This is an interesting observation. A deeper understanding as to why women who are sexually active both online and offline are more likely to seek information about sexuality than other women most certainly requires a more qualitative approach. It is not unlikely that being sexually active promotes further curiosity and an urge to know more about sex. On the other hand, it is also possible that having had sex with someone that one has met online – especially if it was a single encounter – may lead to a concern, even anxiety, about the consequences of the eventual sexual risk-taking involved. Seeking online information could very well function as a way of coping with that anxiety.

Men who had read erotic novels online and who had chatted about sex online were more likely to have sought online sexuality information than men who had not engaged in these behaviours. At this point we are unable to explain these results, but they suggest that, of those who use the Internet to seek information about sexuality, women's other online

sexual activities revolve around sexual encounters while men's other online sexual activities are more related to online communication (reading and writing).

This study showed that the reasons for using the Internet to seek information about sexuality were primarily to get knowledge about the body, about how to have sex, and out of curiosity. These results coincide with prior research (Daneback and Löfberg 2011). For women aged 18–34 knowledge about the body was the primary reason, while for women aged 35–65 curiosity was the primary reason. In comparison, all men reported curiosity to be their primary reason.

Only a small proportion of the respondents reported anonymity as the reason to seek sex information online (ranging from 7% to 22% across age groups). This is an interesting observation since anonymity has been suggested as one of the driving forces behind the use of the Internet for sexual purposes (Cooper 1998). Perhaps this mirrors a more liberal attitude towards sex and sexuality in Sweden, but also that anonymity may be of less importance than previously thought. A previous study indicated that for young Internet users it was more important to not have to talk about sex with someone face to face compared with being anonymous (Daneback 2006).

In this study, we showed that the various reasons to use the Internet to seek information clustered around three dimensions. These dimensions comprised reasons related to embarrassment, knowledge, and curiosity. Moreover, we showed that these dimensions were associated with the respondents' socio-demographic characteristics and sexual behaviour and that respondents had different reasons for seeking information about sexuality online. For example, men with low sexual activity in terms of frequency of sex were more likely to report embarrassment-related reasons. Respondents who reported knowledge-related reasons were more likely to be Swedish-born heterosexual women aged 18–24. And lastly, those who reported curiosity-related reasons were likely to be heterosexuals with high sexual activity in terms of frequency of masturbation.

Recognising differences in the reasons for seeking information about sexuality online may be helpful in identifying the needs of different groups of individuals and tailoring the information provided as well as the means utilised to provide the information; for example, through websites and web (discussion) fora. Web-based tailored interventions have been shown to positively impact a wide range of health behaviours, including sexual health (Bennett and Glasgow 2009; Noar, Black, and Pierce 2009; Ybarra and Bull 2007). Key characteristics of effective programmes include the ability to tailor activities by gender and by readiness to change (Lustria et al. 2009; Noar, Black, and Pierce 2009), reiterating the need to better understand gender and other differences in Internet usage regarding sexual health as demonstrated in the current study.

### *Limitations*

This study was not without limitations. First, it was a convenience sample; thus, we are not able to make generalisations to a larger population. Furthermore, without a population-based sample there is no way to estimate the number of people who may use the Internet for sexual purposes in general, and to seek information about sexual issues in particular. However, a prior study examined a national random population-based sample with an Internet sample and found them to be partly comparable, although the respondents in the Internet sample were younger, better educated, living in a major city, in committed relationships, and had had more sex partners in the past year (Ross et al. 2005). Second, the current study was conducted in Sweden and the results may differ from those in other countries on several parameters. Nevertheless, Cooper et al. (2003) found their results to

be cross-culturally comparable. Third, more than one-half of those who started to fill out the questionnaire quit before completion, which may have introduced a dropout bias. In a prior study, Ross et al. (2003) found drop-out to vary by, for example, gender, sexual orientation, and relationship status. Fourth, this was a self-reported questionnaire, which means that participants may have over-reported or under-reported their actual behaviour due to social desirability pressures.

## Conclusions

This is one of the first studies to focus on the use of the Internet to seek information about sexuality. We found that those who used the Internet for seeking information about sexual issues differed from those who engaged in other sexual activities online. Furthermore, there were different reasons for seeking sex information on the Internet, indicating a non-homogeneous group.

The Internet seems to be a source of information about sexuality for those who use the Internet for sexual purposes, even in a country that has a tradition of age-appropriate and accurate sex education in schools. Either the school sex education programmes do not provide the information that the students want or they do not cover issues sufficiently, or, more likely, there are subsequent questions regarding sexuality that arise in adulthood. Overall, our results suggest that the need for information and knowledge about different aspects of sexuality makes itself felt during different periods of the life-course. Furthermore, it may also be the case that an increasing occurrence of sexually-related activities on the Internet itself, of which quite a few lead to sexual encounters offline, creates a need for more information about sexuality and sexual behaviour. This we need to know more about. Tailored, web-based sexual health interventions have the potential to reach individuals via established media, which they are already accessing for credible, confidential, and non-judgemental information.

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