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A growing number of clients are presenting in therapy with problems related to their on-line sexual habits. Adults who had used the Internet for sexual pursuits at least once ( $N = 9,177$ ) completed a 59-item on-line survey. Men and women generally behaved differently, and most (92%) indicated their on-line sexual behaviors were not problematic. Heavy users (8%) reported significant problems typically associated with compulsive disorders. Problems were highly correlated with time spent on-line for sex. Results are discussed in terms of their research and practice implications, including diagnosis and treatment. Recommendations are made for outreach prevention programs and future policies.

Use of the Internet and the amount of time people are spending on-line for work, school, and recreation is exploding. As people devote increasing amounts of time to this "cyber-dimension," professional psychologists and other social scientists are questioning how this technology affects interpersonal communication and behavior (Kandell, 1998; Turkle, 1995). More important, for us as clinicians, it seeks to answer the question of how this technology affects us and our clients. With an estimated 9 million people logging on daily and a 25% increase in growth every 3 months (Cooper, 1998; Fernandez, 1997), you probably have noticed Internet references cropping up with your clients—or you will soon.

If a husband were to drag his wife into your office because he was upset she spends their "together time" corresponding with her pals in sexually oriented chat rooms instead of paying attention to him, what would you think? Would you be able to distinguish "normal sexual exploration" from a deeper "sexual acting-out"

problem? Do you know enough about sexual behavior on the Internet—where people go, what they typically do, and how they do it?

There is an almost unlimited amount of information available to be accessed on the Internet, and a sizable chunk of it is related to sexuality. In fact, sex is the number one searched topic on the Internet (Cooper, 1998; Freeman-Longo & Blanchard, 1998). From the Internet's earliest days, sites for sexually explicit material quickly took root and flourished. This situation led to questions of regulation and controversy, including attention from the U.S. government. Nevertheless, people continue to use on-line services to pursue their sexual interests and to make contact with others for a multitude of sexual agendas. For example, it was recently estimated that during the month of April 1998, the five most frequently accessed sexually oriented adult Web sites had roughly 9 million visitors, which represents 15% of the 57 million Americans in the universe of World Wide Web (WWW) users (Goldberg, 1998a).

### Diverging Views of Internet Sexuality

Two major positions appear to have developed among scholars and laypeople on Internet sexuality. The first position to emerge was that Internet sexuality is pathological. This perspective is consistent with a medical model and tends to focus on addiction and compulsivity (Bingham & Piotrowski, 1996; Durkin & Bryant, 1995; Van Gelder, 1985; Young, 1997). The second position regards on-line sexuality as more adaptive, emphasizing sexual exploration and relatedness (Cooper, 1998; Cooper & Sportolari, 1997; Leiblum, 1997).

#### *The Pathological Perspective on Internet Sexuality*

The first studies of Internet sexuality, or "cybersex," emphasized the pathological aspects of sexual behavior. Durkin and

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Bryant (1995) focused on the use of the Internet for criminal and deviant behavior. They distinguished various motivations for erotic computer communication, from mild flirtations to seeking and sharing information about sexual services to frank discussions of specific deviant sexual behavior. They posited that cybersex allows a person to operationalize sexual fantasies that would otherwise have self-extinguished if it were not for the reinforcement of immediate feedback provided by on-line interactions. In a similar way, Van Gelder (1985) pointed out the dangers of Internet communication being used to obtain child pornography, to contact youngsters, or to misrepresent one's sexual identity (with either harmless or malevolent intent).

As the Internet gained popularity and cases of excessive use were reported, researchers became interested in studying the addictive (including sexually addictive) potential for its use (Young, 1996, 1997; Young & Rogers, 1998). *Internet addiction*, as it is often called, usually implies a psychological dependence on the Internet that is characterized by an increasing investment of resources in related activities, unpleasant feelings when off-line, increasing tolerance to the effect of being on-line, and denial of the problematic behavior (Kandell, 1998). Depression was found to be a significant factor in the development of pathological Internet use (Young & Rogers, 1998), and it was suggested that excessive use may be related to psychological difficulties stemming from social isolation (Leiblum, 1997).

Young (1996) studied Internet addiction over a 3-year period. She modified the *Diagnostic and Statistical Manual of Mental Disorders*, fourth edition (*DSM-IV*; American Psychiatric Association, 1994) criteria for pathological gambling and in so doing was able to identify 396 "addicts." She found that the addicts in her sample used the Internet an average of 38 hr per week for nonacademic and nonprofessional purposes. This use, in turn, caused detrimental effects in their performance in academic and professional spheres. "Nonaddicts" were found to use the Internet an average of 8 hr a week without reporting significant consequences.

Young (1997) identified three psychological reinforcements underlying computer mediated communication: social support, sexual fulfillment, and creating a persona. She found that dependent individuals predominantly used the highly interactive features of the Internet to meet, socialize, and exchange ideas with new people. In contrast, nondependent individuals primarily used the Internet to gather information and to maintain preexisting relationships through electronic mail. These findings suggest that the use of particular types of media may be associated with pathology.

The attitudes individuals hold about computer use for sexual and romantic purposes appear to parallel closely those they hold toward sexuality in general. Cyberspace sexuality seems to be regarded by both mental health professionals and laypersons with a measure of trepidation—that too much of a good thing might be detrimental. This wariness seems to extend to commonly accepted concepts that are used in research on sexuality.

Bingham and Piotrowski (1996) first applied the notion of addiction to users of sexual Internet sites. They included 6 individuals diagnosed as "addicted to cybersex" in an outpatient community-based treatment for sex offenders. The researchers identified four common characteristics in these 6 individuals: inadequate social skills, engagement in sexually explicit fantasies, communication with a figment of their imagination, and an inability to control the urge to engage in cybersex. Caution should be

exercised in generalizing these traits to all users of on-line sexual sites. The researchers studied very few individuals and they dealt with very specific issues, from obsessive bondage fantasies to developing on-line love affairs. Nevertheless, this cluster of qualities offers intriguing possibilities.

Mental health professionals continue to debate whether the concept of addiction can be appropriately applied to the realm of sexuality. Carnes, a prominent figure in the treatment of sexual addiction, estimated that between 3 and 6% of the general population might be deemed to be sexual addicts (Carnes, 1991; E. Coleman, personal communication, 1998; Schneider, 1991). Levine and Troiden (1988) and Coleman (1991), supporters of the concept of sexual compulsion, were cautious. They wanted to limit the application of the concept to behavior that is in conformity with current social mores and customs in order to avoid stigmatization of patients. Their caution seems warranted in light of research that indicates that therapists' initial assessment of sexual addiction may be influenced by a number of variables, including their values, religiosity, and gender (Hecker, Treppe, Wetchler, & Fontaine, 1995).

Addiction and compulsion remain two leading models in sexual behavior research. A measure of sexual compulsivity (Kalichman & Rompa, 1995) was found to be positively associated with loneliness, low self-esteem, and lack of sexual self-control. These descriptors are consistent with clinical and theoretical portrayals of persons with sexual addictions (Carnes, 1991). Recognizing the value of this relevant body of research, in this study we collected data on factors reflecting some of the assumptions associated with these findings that are also reflective of the addiction and compulsion models.

### *An Adaptive Perspective: Sexual Expression*

A few authors recently presented more adaptive views of the use of the Internet for sexual purposes. Newman (1997) argued that the creation of the "information superhighway" offers new ways to candidly discuss sexuality. He gave as an example a situation in which one partner in a couple wants to take part in a sexual activity that is met with reluctance by the other partner. He suggested that the information available to both partners on the Internet can normalize sexual desire and inform their ongoing discussions. Framing sexual interactions within the context of relatedness, Cooper and Sportolari (1997) examined the notion of romance in cyberspace. They coined the term "computer mediated relating" (CMR) to describe the interactions taking place through the use of electronic mail (E-mail). They identified a number of positive aspects to this type of relating, including, most notably, a reduction in the role that physical attributes play in the initial decision to pursue a relationship. Cooper and Sportolari argued that these exchanges can promote and support focus on common interests, values, and emotional intimacy over the more typical focus on physical attractiveness.

Leiblum (1997) viewed cybersex as a type of sexual expression that ranges along a continuum from simple curiosity to obsessive involvement. For the people or their partners who seek therapy for sexual concerns, on-line sexual pursuits are often part of a constellation of issues linked to social isolation and having an unsatisfactory life. She distinguished three composite clinical profiles of persons who experience problems with cybersex. The first profiled

group she called "loners," which comprises persons for whom cybersex represents an accommodation to problematic or impoverished life situations of either short or long duration. The second category she called "partners" because the involved persons are part of a couple. One partner's involvement with cybersex causes relational or sexual difficulties. The third group she called "paraphilics" because they are dependent on cybersex to supply them with a source of stimulation and satisfaction for their unconventional sexual predilections and behaviors.

It appears that Internet users access sexual sites for many different reasons and purposes. The above theoretical arguments and clinical observations remain to be investigated and supported empirically. There is an important gap in knowledge about Internet users who access sexual sites, which could be partially filled by collecting, describing, and examining data on these individuals. Assuming that all individuals who access sexual sites are dealing with pathological issues would be an error. A more open, sex-positive stance that considers on-line sexual behavior as ranging along a continuum from "normal" to "problematic" expression increases the likelihood of capturing a greater understanding of this new twist in age-old human behavior.

#### *Computer-Mediated Survey Research*

The use of the Internet for sexuality survey research is a new idea. It raises at least two important questions: Are the data gathered reliable? How will the measurement of the WWW audience affect research conclusions? With the exception of one study (Yates, Wagner, & Surprenant, 1997), which found that college students reported significantly more sexually risky behaviors when reporting on paper questionnaires than on a simple computer network, studies support the use of this modern technology. Other studies using computer-mediated technology to assess psychopathology or measure risky sexual behavior have found that adolescents and adults respond as or more truthfully using a computer than they do either face-to-face (Hasley, 1995; Kobak et al., 1997a; Locke et al., 1992; Millstein & Irwin, 1983), over the telephone (Kobak et al., 1997b), or on paper-and-pencil questionnaires (Locke et al., 1992; Millstein & Irwin, 1983; Turner, Ku, Lindberg, Pleck, & Sonenstein, 1998). Thus, it seemed the next logical step was to inquire about on-line behavior by conducting a study on-line.

#### *Profiling: An Inclusive Approach for Studying Internet Sexuality*

Very little empirical data exists on the characteristics or motivation of individuals who access sexually explicit sites. There is some sense that Internet users are likely not to constitute a unitary group but rather to form diverse subgroups. There is clear evidence that gender constitutes a variable that distinguishes users of sexually explicit Internet sites. Males have been found to make up two thirds of users and account for 77% of on-line time (CommerceNet/Nielsen Media, 1998). They go on-line on a daily basis more frequently than females (Graphics, Visualization and Usability Center, 1997) and feel more competent and comfortable using the Internet than women (Atwood, 1996). Men use the Internet for a wider variety of reasons and are more likely to use the Internet for recreational purposes; that is, to gamble, unwind, play games,

and use adult-only resources (Morahan-Martin & Schumacher, in press). In a similar way, multiple user domains (MUDs; competitive, aggressive, and action-oriented games) were found to be primarily used by males. Morahan-Martin (1998) offered that the proportion of male-to-female users (Nua, 1998) has changed in the last 4 years. In 1994, men outnumbered women 20:1. The gap has been reduced to a ratio of 2:1. Morahan-Martin argued that this difference is due in part to the fact that the on-line culture is masculine and that attitudes toward technology are transferred to the use of the Internet.

### The MSNBC On-Line Sexuality Survey

#### *Measures*

Our study attempted to expand significantly our knowledge base of who goes on-line for sexual pursuits, where they go, and whether it seems to be causing problems in their lives. It is an attempt to understand and predict possible implications of choices they may make. A 59-item questionnaire was designed to survey users of sexual Internet sites about their on-line preferences and motivations, including age, gender, occupational status, sexual orientation, current relational status, on-line sexual pursuit behavior, frequency of specific sexual pursuit behaviors, preoccupation with being on-line, feelings experienced while on-line, the degree to which they present themselves differently from the way they actually are, and measures of propensity to engage in novel or risky sexual behaviors.

#### *Recruitment and Programmed Safeguards*

Announcements of the survey were made on the front page of the MSNBC Web site, the on-line presence (or "gateway") of a major U.S. news organization. Media interest in the survey resulted in interviews and stories on NBC, MSNBC, and ABC television networks as well as several major newspapers, which then resulted in a serendipitous secondary recruitment. Individuals who visited the MSNBC Web site were invited to participate in this study by accessing the survey located at a specific Internet address. Those who chose to do so had electronic access to an interactive Web page containing informed consent and the 59-item questionnaire. Participants were instructed to answer each item and to submit their completed questionnaires electronically. Programming precautions were taken to prevent multiple submissions of the survey by each respondent. The MSNBC server initially assigned a globally unique identifier (GUID) number to each participant that was stored as a cookie in his or her Web browser program for the duration of the survey. GUIDs were included in all submissions and were subsequently used to identify multiple submissions of the survey by individual respondents. A hidden source code was used to block multiple submissions and also to load a Web page reading "Sorry you can only vote once"; however, a determined user would have been able to submit more than one survey from different computers (e.g., both work and home).

All respondents were volunteers and remained anonymous. Response sets were stored in an appended database linked to the MSNBC server. The final data were electronically transferred in text delimited format using a file transfer protocol (FTP) client and imported into a Microsoft Access 7.0 database. Statistical analyses

were completed using SPSS 8.0 software running under Windows 95 on a Pentium 233 MMX platform.

### Validity and Reliability

Because all participants were completely anonymous, a rigorous screening protocol was designed to increase the validity and reliability of the results. Data were collected over a 7-week period during March and April 1998, and a total of 13,529 surveys were returned. All questionnaires were verified to help ensure their authenticity and appropriateness. Approximately 8% ( $n = 1,152$ ) were initially eliminated because they were (a) determined to be multiple submissions ( $n = 354$ ); (b) submitted by respondents reportedly under 18 ( $n = 555$ ) or over 90 years of age ( $n = 12$ ); (c) found to have inconsistent responses between critical items ( $n = 82$ ); or (d) submitted with all items left blank ( $n = 149$ ).

Again, to be conservative, the decision was made to analyze data only from submissions that were complete. Thus, an additional 3,200 (24%) questionnaires were eliminated because they had 1 to 46 blank items. The final sample consisted of 9,177 individuals with complete responses. A frequency analysis revealed that 87% ( $n = 2,779$ ) of the discarded surveys had 1 to 5 blank items. These were compared with the final sample to ensure that it was representative of all participants in the survey. Overall, both groups were similar or identical across a variety of important demographic and behavioral variables. The discarded group had slightly fewer males (84%) than the selected group (86%), which was probably significant,  $\chi^2(1) = 10.87, p < .01$ , due to effects of large sample sizes. Two-way analyses of variance (ANOVAs; Gender  $\times$  Selection) and Bonferroni post hoc analyses revealed no significant age differences between females ( $p < .09$ ) and only a 2.5-year age difference between males ( $p < .01$ ). There were also no significant differences between samples in measures of sexual orientation,  $\chi^2(2) = 4.52, p < .10, ns$ , professional occupational status,  $\chi^2(1) = 2.96, p < .10, ns$ , or Internet access location  $\chi^2(3) = 4.17, p < .24, ns$ . There was a small difference in current relational status,  $\chi^2(3) = 7.73, p < .05$ , due to slightly more males (4%) being married in the discarded group.

### Self-Selection and Sample Bias

Because this study was based entirely on voluntary responses from self-selected visitors to the MSNBC.com Web site, we considered possible sample bias. For example, individuals who chose to participate might have been heavier users of the Internet in general or have had greater interest in the sexual aspects of the Internet. This would not make their responses inherently unreliable, but it could skew the final sample and possibly diminish the responses' usefulness as indicators of widespread Internet user behavior. To further assess the possibility of self-selection bias, demographic data of the 9,177 respondents in the final sample were compared with a parallel random sample of 3.8 million estimated visitors to the MSNBC.com Web site during April 1998 (Goldberg, 1998b). Respondents were also compared with a parallel sample of 9.6 million estimated visitors to the five most frequently accessed sexually oriented adult Web sites during the identical time period (Goldberg, 1998a). They were found to be similar in a number of important measures.

Although a much larger percentage of respondents were males (86%), they had demographic data similar to those of men who visited the MSNBC.com Web site. Table 1 shows that the age distribution of male respondents did not significantly differ,  $\chi^2(1) = 5.66, p < .06, ns$  from Goldberg's (1998b) estimates of adult male visitors to the MSNBC.com Web site. Female respondents were younger than women in the estimated population, and nearly twice as many (59% vs. 34%) fell into the 18-to-34-years-old age range (Goldberg, 1998b). Demographic profiles of visitors to the adult-oriented websites (Goldberg, 1998a) were also very similar to the respondent data, including the percentage of men (88%) and frequency of 18-to-34-year-old women (53%). Although the nature of self-selected surveys limits generalizing results to the entire population of Internet users, the above data increase confidence in our overall findings and demonstrate that on the Internet—as well as elsewhere in our society—men are the largest consumers of sexually explicit material.

### Effects of Large Sample Size

Because the final sample of respondents to the survey was still very large ( $N = 9,177$ ), attention was paid to the possibility that trivial differences could possibly reach statistical significance when analyzed. Despite the large size of the sample, many variables had extremely small variances. ANOVAs and conservative post hoc analyses (Scheffé, Bonferroni) were used whenever possible to control for sample size effects.

### A First Look at the Results

As previously discussed, male respondents (86%) outnumbered female respondents (14%) by a ratio of 6:1. The average overall age of the sample was 34.96 years,  $SD = 11.62$  years. Men were slightly older (35.34 years,  $SD = 11.79$ ) than women (32.60 years,  $SD = 10.24$ ). Most participants (87%) identified themselves as heterosexual, 7% identified themselves as gay or lesbian, and 7% labeled themselves as bisexual. Most individuals (64%) were either married (47%) or in a committed relationship (17%). Of the single individuals (36%), half were dating (18%), and half were not dating (18%).

A majority of respondents (59%) worked in professional occupations that include the computer field (24%), educator (2%), health care provider (3%), management (10%), and professional (20%). Thirteen percent of respondents were students, and 2% were unemployed. The remaining 27% were distributed similarly among various occupations, including clerical, industrial, trades,

Table 1  
Gender and Age Ranges in Goldberg and Survey Samples  
During April 1998

Age range	Goldberg sample		Online survey sample	
	Males	Females	Males	Females
Ages 18–34	43.0%	34.1%	45.6%	58.8%
Ages 35–49	38.0%	43.3%	36.5%	35.5%
Ages 50+	19.0%	22.6%	17.9%	5.7%

and sales. A much higher ratio of males had professional or managerial positions (40%) or were in the computer field (2:1).

Most individuals reported that they go on-line for sexual pursuits by using a computer at home (78.8%); 5.8% admitted using an office computer, and 12.7% said they do so both at home and at the office. Less than 3% indicated going on-line for sexual pursuits in other settings. Women are more likely (84%) than men (78%) to sign on at home,  $\chi^2(1) = 24.07, p < .0001$ . More men (6%) than women (5%) go on-line at work,  $\chi^2(1) = 5.06, p < .05$ , or both at home and at work (men = 14%, women = 7%),  $\chi^2(1) = 40.31, p < .0001$ . More women (4%) than men (3%) indicated signing on in settings other than at home or at the office,  $\chi^2(1) = 15.04, p < .001$ . The finding that 1 out of 5 individuals sign onto sexually related sites through their office computer does not necessarily indicate excessive use. For some individuals, their office computer may be their only connection to the Internet.

Strong gender differences for preferred on-line media were evident, with men most preferring Web sites featuring visual erotica (50% men to 23% women),  $\chi^2(1) = 331.33, p < .0001$ , and women favoring chat rooms (49% women to 23% men),  $\chi^2(1) = 377.42, p < .0001$ . It is significant that 51% of women reported they never download sexual material. Women, on-line as elsewhere, prefer more interaction and the development of relationships and seem to be less interested in visual stimuli (Web sites) alone. This is consistent with the position expressed by Bailey, Gaulin, Agyei, and Gladue (1994) that differences exist between genders on relevant aspects of human mating psychology, namely, response to visual cues.

Individuals were asked to report the total number of hours they spend on-line per week for various purposes. The most frequent response was between 1 and 10 hr a week (30%). Less than 3% reported going on-line for less than 60 min per week. This was not surprising considering that the survey was conducted on-line. Almost one third (27%) said they spend between 11 and 20 hr a week on-line, and 20% reported being on-line for 21 to 30 hr a week. Approximately 5% (5%) spend between 41 and 50 hr on-line. Only 3% spend between 51 and 60 hr on-line, and 5% indicated they sign on for more than 60 hr a week. The distribution of frequencies between genders was similar. Thus, 3 out of 4 people spend between 1 and 30 hr a week on-line for work-related and recreational activities.

Despite previous research and speculation, our data clearly found that going on-line for sexual pursuits did not lead to heavy use for the vast majority of people. Table 2 reveals that an

overwhelming majority (92%) spends under 11 hr per week in on-line sexual pursuits. Of those, almost half (47%) report spending less than 1 hour a week on-line for sexually related activities. Less than 8% of the sample spends 11 or more hr per week engaging in on-line sexual activities. Thus, on the dimension of time on-line, most people appear to be very capable of limiting their on-line time in sexual pursuits to reasonable levels.

Most people (61%) admitted pretending occasionally (48%) or often (20%) to be a different age than they are. Despite the popular conception that "gender bending" is a pervasive activity, it was found to be a fairly unusual event. Only 5% of the sample indicated pretending to be a different gender, and most of them (4%) said that they do so only occasionally. Less than half of the respondents (38%) said they present themselves as a race different than their own on occasion (27%) or more often (11%). A small yet considerable proportion of respondents (14%) reported misrepresenting themselves on other unidentified factors.

Almost 3 out of 4 respondents (70%) indicated keeping secret from others how much time they spend on-line for sexual pursuits. Significantly more men (72%) than women (62%) reported keeping their time involvement secret,  $\chi^2(1) = 46.64, p < .0001$ .

People appear to use sexual material on the Internet in much the same ways they generally use sexual stimuli in our society—as a source of entertainment more than for sexual release (analogous to reading a *Playboy* issue or viewing *Baywatch*). Most participants reported their on-line sexual experiences to be satisfying but not particularly arousing. Whereas 88% of the sample experienced some form of excitement when pursuing sexual interests on-line, few of them (20%) felt both excited and aroused. Only 16% were never satisfied with their experience, and most (87%) reported never feeling guilty or ashamed about it. Significantly more men (84%) than women (80%) reported being satisfied to some degree with their on-line sexual pursuits,  $\chi^2(1) = 13.53, p < .001$ .

As previously reported by Gaither, Franklin, Hegstad, and Plaud (1997), significant differences were found between men and women on the three variables reflecting risk-taking characteristics. Men ( $M = 29.12, SD = 6.24$ ) had significantly higher sexual risk-taking (SSS) scores than women ( $M = 27.43, SD = 6.45$ ),  $F(1, 9175) = 83.37, p < .0001$ . In a similar vein, men ( $M = 24.43, SD = 6.62$ ) had significantly higher nonsexual risk-taking (NES) scores than women ( $M = 22.38, SD = 6.78$ ),  $F(1, 9175) = 105.12, p < .0001$ . Men also had significantly higher sexual compulsivity (SCS) scores ( $M = 17.79, SD = 6.11$ ) than women ( $M = 16.59, SD = 6.32$ ),  $F(1, 9175) = 42.25, p < .0001$ . The SSS and SCS

Table 2  
Time Spent On-Line for Sexual Pursuits by Males and Females

Gender	Hours per week spent on-line for sexual pursuits								
	<1	1-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80+
Male									
N	3,581	3,668	446	115	27	15	8	6	31
Percent	45.3	46.4	5.6	1.5	0.3	0.2	0.1	0.1	0.4
Female									
N	696	467	70	13	15	10	2	2	4
Percent	54.5	36.5	5.5	1.0	1.2	0.8	0.2	0.2	0.3
Total	4,278	4,135	516	128	42	25	10	8	35
Percent	46.6	45.1	5.6	1.4	0.5	0.3	0.1	0.1	0.4

scores in this study were about 20% higher and the NES scores were about 10% lower than Gaither reported with his college-aged sample. This probably reflects higher sexual seeking behavior (SSS and SCS) and age (35 compared with 19 years old for the average ages) among the on-line users.

### A Second Look at the Data

The sample was divided into three groups representing their time spent on-line for sexual pursuits (TOS). Low users (LU) spent less than 1 hr/week TOS, moderate users (MU) spent 1–10 hr/week TOS, and heavy users (HU) spent 11–80+ hr/week TOS. Ninety-two percent of respondents were classified either as LU (46.6%) or MU (45.1); only 8.3 were classified as HU.

Table 3 summarizes group differences on demographic variables. Gender ratios and ages did not differ between groups,  $F(2, 9171) = 1.43, p < .24, ns$ , although men were slightly older than women,  $F(2, 9171) = 5.60, p < .004$ . LU groups reported having the most marriages and committed relationships, MU groups had fewer, and HU groups reported having significantly fewer marriages and committed relationships,  $\chi^2(2) = 15.85, p < .0004$ . A similar pattern was revealed with reported levels of interference,  $\chi^2(5) = 38.02, p < .0001$ , and jeopardy,  $\chi^2(5) = 24.09, p < .0002$ , in the lives of respondents, such that the LU group reported aspects of their lives were least interfered with and least jeopardized, the MU group reported more so, and the HU group reported the most as TOS increased. Table 4 shows that SSS, NES, and SCS also increased with TOS. Two-way ANOVAs (TOS  $\times$  Gender) and Scheffé post hoc analyses revealed significant differences between groups ( $p < .001$ ) for all three measures of risk taking behavior (LU < MU < HU).

When asked directly, most people who accessed sexual Internet sites did not report being distressed by their on-line behavior. Only 12% of the sample indicated perceiving themselves as downloading sexual material too often.

Multiple regression of several items in the SCS scale indicated that they were strong predictors of TOS,  $R = .23, F(3, 9173) = 166.19, p < .0001$ . A distress score was computed by summing the responses to the three items and is shown in Table 4. Linear regression of distress scores as a function of TOS was highly significant,  $F(1, 9175) = 428.77, p < .0001$ , as shown in Figure 1. Two-way ANOVAs (TOS  $\times$  Gender) and Scheffé post hoc analyses of distress scores revealed significant differences among the three groups, which is consistent with the three Kalichman scales discussed earlier such that the LU group reported the least distress,

Table 3  
Demographic Data as a Function of Time Spent On-Line for Sexual Pursuits (TOS)

Category	Low users	Moderate users	Heavy users
N	4,278	4,135	764
Males (%)	83.7	88.7	84.8
Age (years)	35.4	34.5	35.1
Married-committed (%)	65.8	63.4	58.6
Not interfered (%)	77.4	62.2	49.0
Not jeopardized (%)	84.0	76.0	65.1

Table 4  
Risk and Distress Scores as a Function of Time Spent On-Line for Sexual Pursuits (TOS)

Score	Low users		Moderate users		Heavy users	
	M	SD	M	SD	M	SD
SSSS	27.3	6.3	29.9	5.9	32.2	6.3
NSSS	23.7	6.7	24.4	6.5	25.3	6.9
SCS	16.4	5.6	18.3	6.0	21.1	7.5
Distress	4.0	1.8	4.5	2.0	5.4	2.7

Note. SSSS = Sexual Sensation Seeking Scale; NSSS = Nonsexual Sensation Seeking Scale; SCS = Sexual Compulsivity Scale.

the MU group reported more, and the HU group reported the most distress.

Most respondents (68.2%) said that their on-line behavior does not interfere with, nor does it jeopardize (78.8%), any areas of their lives. Table 5 illustrates that the use of computers both at work and at home to access the Internet also increased with TOS. In other words, heavy users were more likely to go on-line for sexual pursuits using computers at home and at work compared with moderate and low users. The use of chat rooms and news groups also increased with TOS use, reflecting that heavy users are more likely to choose these media than the two other groups. It should be noted that sexually oriented USENET newsgroups are frequently used to both post and download visual erotica.

Factor analysis was performed on 16 items relating to respondents' experiences both on-line and off-line. Principal-components analysis and varimax rotation revealed four factors that had eigenvalues greater than 1.00 and accounted for 57.3% of the total variance. These factors are shown in Table 6 and

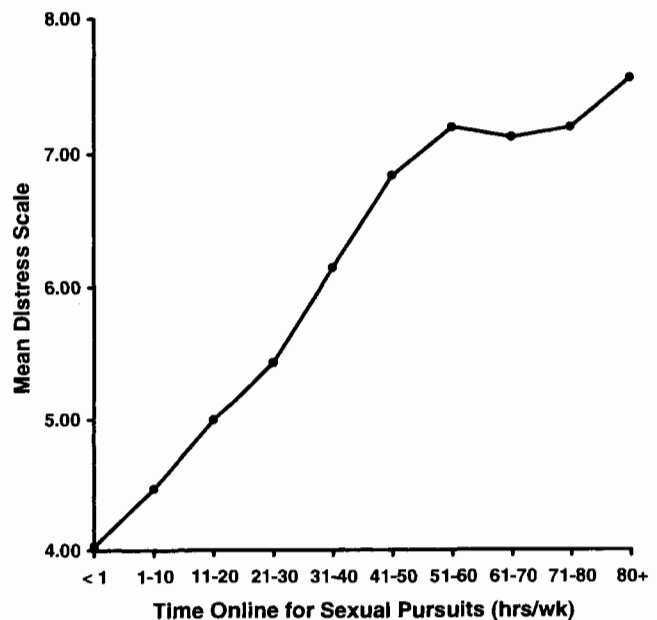


Figure 1. Distress score as a function of time on-line for sexual pursuits.

Table 5  
*Log-On Location and Preferred On-Line Medium as a Function of Time Spent On-Line for Sexual Pursuits (TOS)*

Variable	Low users (%)	Moderate users (%)	Heavy users (%)
Log-on location			
Home	81.2	77.4	72.4
Work	7.0	5.2	2.2
Home and work	7.3	16.0	24.5
Other	4.4	1.3	0.9
On-line medium			
WWW	47.4	47.1	33.6
Chat rooms	23.4	27.6	37.0
Newsgroups	9.5	14.4	15.7
E-mail	10.9	6.5	6.7
Other	8.8	4.4	7.0

Note. WWW = WorldWide Web.

were named to reflect the items clustered within them. Factors include Reflection (eigenvalue = 4.47, 27.9% of variance), Action (eigenvalue = 2.00, 12.5% of variance), Arousal (eigenvalue = 1.58, 9.9% of variance), and Excitement (eigenvalue = 1.12, 7.0% of variance). The factors are discussed in detail in the Implications and Applications sections following. In general, people appear to have different experiences or be involved in various psychic operations while pursuing sex on the Internet.

### Implications

Internet communication might be reflective of the demands of an increased pace and intensity that individuals in our society experience. Computers, the Internet, and E-mail allow for easy access to vast stores of information as well as the ability to have rapid and brief contacts with interested others. For most individuals, the availability of this type of communication and means of accessing information may increase their productivity and enhance their lives; however, the nature of this type of communication might also create problems for those individuals who are more susceptible to intense sexualized interactions.

Persons who spend large amounts of time on-line report more perceived problems. A significant correlation was found between time spent on-line for sexual pursuits and negative effects on one's life. The HU group preferred chat rooms to Web sites and reported higher frequencies on items that "most interfered" with and "most jeopardized" important aspects of their lives. This finding has also been reported in recent studies, suggesting that for both men and women the most powerful and potentially problematic types of interactions take place in chat rooms with other Internet users.

The finding that heavy users from both genders use chat rooms more than average users suggests that high use is associated with greater interaction with other Internet users. The relationship between these two variables seems to corroborate an association of sexually compulsive or addictive behavior with social isolation (Leiblum, 1997). It presupposes that individuals are motivated by a need for greater social contact, which is consistent with Young's (1997) position that social support and sexual fulfillment serve as psychological reinforcements underlying computer-mediated communication.

The association between high use and interaction appears to be less strong for women, however. HU women were found to use Web sites twice as much as MU women. Thus, it seems that other variables mitigate this relationship in women. One possibility is that women who visit Web sites are more responsive to visual cues, a quality often attributed to men's sexuality. This is of particular interest when one considers that younger women represented a significant proportion of our sample. It suggests that younger women may feel freer to explore that aspect of their sexuality.

These findings lead to a number of important conclusions. The vast majority of on-line users generally seem to use Internet sexual venues in casual ways that may not be problematic. However, the strong correlation between time spent on-line for sexual pursuits and measures of distress, of sexual compulsivity, and of sensation seeking (sexual and nonsexual) suggest that these variables can serve as indicators in identifying individuals at risk for developing psychological difficulties. The finding that a significant minority of people who spend more than 11 hr a week on-line for sex had higher scores on these four measures than the rest of the sample reinforces the association between TOS and the manifestation of problematic behaviors.

Table 6  
*Factor Loadings of Items Relating to Respondents' Experiences On-Line and Off-Line*

Factor	Item relating to respondents' experiences	Loading
Reflection	When I am online for sexual pursuits I sign onto sexually oriented news groups.	.74
	When I am online for sexual pursuits I go to other sexually oriented sites.	.74
	When I am NOT online I spend a lot of time re-living past online experience.	.81
	When I am NOT online I spend a lot of time thinking of new ways to go online.	.73
Action	When I am online for sexual pursuits I download sexually explicit materials.	.68
	When I am online for sexual pursuits I enter sexually oriented chatrooms.	.78
	When I am NOT online I spend a lot of time planning my next online experience.	.77
Arousal	When online for sexual pursuits I often feel excited and aroused.	.71
	When online for sexual pursuits I often feel guilty or ashamed.	.78
	When online for sexual pursuits I have presented myself as being a different gender.	.71
	When online for sexual pursuits I have presented myself as being a different [other].	.68
Excitement	When online for sexual pursuits I often feel excited.	.73
	When online for sexual pursuits I often feel satisfied.	.75

The number of individuals for whom Internet sex can be problematic appears consistent with estimates made of this problem in the population at large. E. Coleman (personal communication, May 1998) estimated that 5% of the general population deals with issues of sexual compulsivity. The slightly higher percentage (8.5%) found in our study can be explained by the sample being entirely made up of individuals who go on-line for sexual pursuits.

The results of this study support previous findings (Young, 1997) and the view of many clinicians that, for a vulnerable but significant minority of heavy Internet users, on-line sexual behavior can be detrimental. Although on-line sexuality appears to be a form of sexual exploration or recreation without negative consequences for most people, those who spend 11 hr or more time on-line in sexual pursuits show signs of psychological distress and admit that their behavior interferes with some area(s) of their lives. Consistent with Leiblum's (1997) position, it is likely that sexual problems can be best understood and treated when considered within a global understanding of a person's psychological functioning. These data are to be interpreted with caution, however. They are correlations and do not ascribe directionality or causality. At present, these findings suggest only an association and do not explain whether these problems were caused by the availability of sexual outlets on-line or whether already existing issues were just being played out in a new forum. The good and bad news is that only about an 8% minority could be characterized as compulsive users. This makes on-line sexual compulsivity a relatively rare condition among the on-line community. Hearing clients talk about sexual "surfing" on the Internet should raise our interest but not necessarily our alarm. We have much to learn about the wide variety of sexual offerings available on the Internet, both positive and negative, and may have to hold our assumptions in check until we understand what meaning it has in our clients' lives. This research might point to certain criteria that help provide concrete markers, such as a minimum amount of time on-line. However, clinicians need to be cautious about jumping to a diagnosis of an on-line sexual compulsion or addiction.

On the other hand, if the 8% of respondents in the study that were found to have sexually compulsive features were to generalize to the 57 million people who log on daily, a whopping 4,560,000 persons could be at risk. Thus, we should neither minimize nor ignore the signs if we suspect our clients have problems where sex and the Internet intersect. We need to explore with clients whether their on-line usage is excessive and whether it is creating or resulting from problems that already exist in their lives.

The identification of four factors related to the on-line experience of users (Reflection, Action, Arousal, and Excitement) suggests that people can have different experiences or be involved in various psychic operations while pursuing sex on the Internet. This finding is particularly useful for one to consider when trying to determine where a problem lies for someone who experiences distress from their on-line behavior. It could provide a way to understand the needs and motivations underlying on-line experience. This model remains to be tested by gathering additional information about respondents' experiences and their psychological functioning. Therapeutic interventions that focus on the identified specific psychological processes could help foster awareness and change in clients.

## Applications

The Internet as a medium shares with its older print, radio, film, and TV siblings a fascination with things sexual. This study provides an important first step in understanding this very common use of the Internet. By helping clinicians get a better sense of the demographics and usage patterns of those who use the Internet for sexual pursuits, we hope that mental health professionals can develop guidelines for preventing, diagnosing, intervening in (early) and treating (later) sexual compulsivity and related disorders. We also hope that these findings can serve as a platform from which to form policies and develop sexually oriented outreach programs with an eye toward having beneficial effects on sexual issues into the 21st century.

In the media's portrayal—and therefore the public's perception—the sexual dimension of the Internet is likened to the sirens of mythology, an irresistible and corrupting force which lures "netizens" to the rocks. These are compelling images, but alas, like the sirens themselves, they are more fantasy than reality. Instead, this study found, and clinicians need to be aware, that most persons (92%) who go on-line for sexual pursuits do not spend excessive amounts of time at it and report very little interference in their lives.

### *What to Look for*

First, how do persons come in for treatment, and what are some presenting complaints? We found that some users reported problems in their relationships as a result of Internet use. As therapists, we know that partners often fight with, withdraw from, and even end their relationships with one another. It should not be surprising that they sometimes do so by retreating to their keyboards. The therapist needs to determine whether Internet usage issues, like money, parenting, or housekeeping issues, are yet another way in which couples play out their ongoing relationship struggles. These issues create distress but do not necessarily constitute a compulsion. However, the access, affordability, and anonymity provided by the Internet (or "Triple A"; Cooper, 1998) can transform simpler, more common relational difficulties into more complex and serious troubles. Imagine a scenario in which an angry spouse gets up in the middle of the night, unable to sleep. She wants comfort and maybe some retaliation for a perceived hurt from her partner. Without even leaving the house she gets involved in an on-line sexual tryst. Although the on-line spouse might argue that she has not actually cheated, she has certainly been involved in a type of sexual interaction. A boundary has been crossed, which makes it a little easier to act out in this way again—and perhaps again. The continued lowering of the acting-out threshold could ultimately lead to a much higher incidence of computer mediated "incidents" and long-term consequences to the involved parties.

Rarely do persons with sexually compulsive tendencies present for therapy with that as their chief complaint. Sexually compulsive behaviors are usually ego-syntonic, gratifying (at least momentarily), and not often consciously linked with other life difficulties. The person is more often "dragged" or "pushed" into therapy because of an unhappy partner, threat of or actual job loss, or a scrape with the law (including sexual harassment charges).

Relationship issues are not the sole means for coming to treatment. Clients present with depression, loneliness, substance abuse

or other forms of compulsive behavior (e.g., shopping, gambling, food). Their on-line activities may be a desperate attempt to salve these painful wounds. An Internet problem may even surface as a complaint about a sleep disorder. In actuality, these clients cannot stop downloading images or do not want to log off sexually oriented chat rooms. Thus, therapists who suspect sexually acting-out issues are at play, particularly among their younger, college educated professional clients who have access to computers, might well consider whether an Internet component underlies the problem.

### *Evaluation*

Once it is decided that an assessment of the individual or couple's on-line activities is warranted, detailed information about their meanings and effects should be gathered along four dimensions: (a) Action, the level of direct activity (downloading, communicating, etc.); (b) Reflection, the cognitive involvement that can have an obsessive quality; (c) Excitement, the reported level of excitement (without arousal) and satisfaction with on-line activities; and (d) Arousal, the experience of excitement and arousal (often accompanied by guilt associated with on-line activities).

A diagnostic interview along the Action dimension should include questions about the number of hours spent on-line total as well as for sexual pursuits. The clinician should be aware of the finding that the number of hours spent on-line in these activities was highly correlated with the degree to which life problems were reported. However, as important as whether a person spends more or less than 11 hr on-line for sexual purposes is whether and to what degree their lives are being disrupted. Has there been a drop-off in interest in or frequency of partner sex, emotional withdrawal from family or friends, preoccupation with the Internet, and concomitant difficulties with concentration or commitment to work, and so forth? Finding the answers to such questions may necessitate interviewing a partner, employer, or other significant persons as part of the evaluation process. Clinicians need not be shy about asking which and how many Internet media are being accessed (Web sites, chat rooms, E-mail, newsgroups, etc.), what they do, and what the draw is for each. (Be alert here to the concept of the triple A engine. Many persons still have off-line sexual pursuits; however, they have found that going on-line is less expensive [affordability]. They are less embarrassed because they are able to log on whenever and to whatever medium they wish [accessibility] without the fear of recognition [anonymity]). Bear in mind that in general, men prefer sexually explicit Web sites and women prefer chat rooms. Remember also that sexual compulsivity and distress were found to be associated with high numbers of hours spent on-line and the use of chat rooms. Try to discover how extensive or limited a person's social support networks are; social isolation and difficulty with social and intimate relationships are often key indicators of persons vulnerable to psychological difficulties.

Inquire into the cognitive effect (Reflection) of on-line sexual pursuits. Are these clients preoccupied with reliving past experiences? Are they obsessively thinking about their latest experience or planning for their next? Are they making promises to themselves or to others to quit going on-line and then breaking those promises? Are they having difficulty with concentration or with

off-line commitments and responsibilities to family, friends, work, or school?

Next, inquire about the Excitement dimension. Are the persons titillated by their on-line sexual pursuits? Most participants in the study reported feeling excited and satisfied but not particularly aroused or guilty about their on-line sexual activities. Be mindful that even noncompulsive persons report that they prefer to keep their on-line (and off-line) sexual enterprises secret. Therefore, the clinician is very likely to encounter resistance to this line of questioning. It is not unusual to encounter secrecy about one's sexual pursuits, on- or off-line, but when it is deeply entrenched and associated with shame and guilt the clinician should be concerned.

The fourth line of inquiry, Arousal, is often the most difficult for both the therapist and the patient. It can be difficult for the therapist to ask about, and embarrassing for the client to admit, the type and nature of one's sexual preferences and fantasies. Still, for the fullest picture to emerge the therapist should ask about whether his or her clients are aroused by their on-line activities, whether they masturbate while on-line or later, and whether these images become incorporated into their ongoing sexual fantasies. Another line of questioning would be to explore whether patients misrepresent themselves on-line. The study findings revealed that creating an on-line persona who is a different age, height, gender, and so on was a piece of the Arousal factor. Finally, the therapist needs to inquire about guilt and shame associated with on-line sexual activities. If arousal, misrepresentation, and guilt are not present, proceed with therapy as usual. If this trio is present and seen in conjunction with frequent on-line usage for large amounts of time and disruption in social, occupational, and recreational arenas, then the possibility of an on-line sexual compulsion becomes more salient.

### *Treatment*

There is a need for specifically tailored treatment strategies for those having difficulties with Internet sexuality. Treatment models are already being developed, such as the computer addiction programs at Maclean Hospital (Belmont, MA) and at Del Amo Hospital (Torrance, CA). Special interventions are being designed to assist their sexually acting-out patients with Internet usage problems (Shaw, 1997). Inpatient treatment is indicated only for persons with entrenched, dangerous, or severely disruptive manifestations of sexual compulsivity. The majority of patients will be treated in outpatient settings. Most of us will rely on interventions that can be used in our offices.

Treatment for on-line sexual acting out needs to be centered on breaking the denial and isolation. Group (psychotherapy or 12-step programs), couples, and individual psychotherapy is the optimal treatment combination. Groups can provide exposure to differing sexual values and norms, opportunities to challenge cognitive distortions and denial, and the social support needed to make lasting changes. Couples therapy can be a forum for assessing reasons the clients' current interpersonal involvements are lacking or being withdrawn from. Individual therapy can help patients examine the deeper intrapsychic roots of their behavior as well as the current life circumstances that maintain it. Also valuable are support groups for the partners of on-line sexual compulsives.

### *Outreach: Prevention, Programs, Policy*

As on-line communication rapidly gains importance in the lives of increasing numbers of Americans, there is a need for mental health professionals to be involved in these early stages of its development in order to minimize potential problems and adverse effects. In addition, there are tremendous opportunities to help shape, direct, and maximize the positive ways that sexuality in our society can be affected.

The Internet is already being used to address a host of sexual issues in our society. Disenfranchised minorities (e.g., the disabled, survivors of sexual trauma, transsexuals) are meeting, forming virtual communities, and exploring sexuality and relationships on-line. Teens are taking their sexual questions from the locker room to their terminals. Lonely people are bringing their romantic hopes to on-line matchmaking services. Each group has unique questions, anxieties, and fears. Sending simplistic messages that on-line sexuality is not for them (especially to teens) only heightens curiosity and intensifies shame. It causes them to go underground with their sexual concerns, perhaps compounding their difficulties. If this happens, we have little hope of intervening and facilitating positive outcomes. Psychologists and other mental health professionals can be instrumental in both disseminating information and ensuring that it is accurate, accessible, specifically tailored to the intended sexual community, and ethically rendered. We can keep creating specially designed single-issue Web sites, which deal with anything from STDs to paraphilias. These might include detailed and comprehensive interactive behavioral treatment modules for common sexual problems (e.g., premature ejaculation) as well as frequently asked questions (FAQs). We can become expert moderators for scheduled interactive on-line chats. We can create on-line movies and animations that address the many sexual questions of the Internet populations. We can be a presence on the Internet as a critical adjunct and first-line intervention for sexual concerns in the rapidly evolving telehealth field, which promises to be increasingly important in the 21st century.

Considering the increasing use of computers by young adults in schools, and on college campuses in particular, educators and college mental health workers should be sensitized to both the potential positive and negative consequences of on-line sexual behavior. These professionals already have a mission and are in positions to influence developmental issues for their students, especially the central and much sought after area of sexuality. By combining these two areas of high interest (the Internet and sexuality), some very powerful and innovative programs (as well as hordes of smiling student volunteers) may emerge.

Incorporating and expanding beyond academia to communities in general, we recommend that

1. Programs be developed and implemented to educate individuals at risk for developing on-line sexually compulsive behavior. Although going on-line for sexual pursuits does not necessarily cause distress or inevitably lead to sexual acting out, it might be useful to provide "markers" for individuals to assess whether their behavior might make them vulnerable. These indicators might help them break through the denial of the consequences of their behavior on their lives. For example, warnings about the long-term effects of Internet acting out might be offered to people with impulsive tendencies whose Internet mediated difficulties fall short of a sexual compulsion. They might also be directed to on-

or off-line support groups or to moderated chats that are (or could be offered in the future) as a service of organizations, such as church groups, mental health associations, managed care organizations, and so forth.

2. Programs be developed to educate individuals about the potential positive effects the Internet can have (a) for helping individuals develop healthy sexual self-esteem and behaviors, (b) for clarifying questions and correcting misinformation about sexuality, (c) for developing virtual communities for minority and disenfranchised populations, and (d) for first-line interventions for persons who struggle with issues they are not yet ready to acknowledge off-line (e.g., sexual orientation, being a survivor of sexual assault) but who might tremendously benefit from "lurking" for a while and seeing how others deal with similar issues.

3. Internet service providers (ISPs) and major providers of on-line adult entertainment post criteria (e.g., spending more than 10 hr per week in on-line sexual activities) and warnings about the potential negative impact on one's life of going on-line for sexual pursuits. In addition, it is recommended that they provide links and an invitation to visit other Web sites (such as the American Psychological Association's Web Site) where on-line sexual acting out and related issues might be addressed in more detail. The alternative sites might contain self-assessment instruments on sexual acting out, criteria for when to seek therapy or some other intervention, and information on how to link up with treatment programs, organizations, or networks of qualified providers. It is recommended that the costs of these on-line clearinghouses would be borne by interested parties, including the adult entertainment industry, managed care organizations, and the recipients of these potential referrals (e.g., affiliated treatment programs).

To date, the adult entertainment industry has been very responsive to public opinion and pressure. It has incorporated a number of suggestions (e.g., offering Web site monitors, such as CyberNanny, and requiring that credit card numbers be presented so that minors are denied access) to enhance its image as a responsible and legitimate member of the on-line community.

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