Cognitive Behavior Therapy with Internet Addicts: Treatment Outcomes and Implications

KIMBERLY S. YOUNG, Psy.D.

ABSTRACT

Research over the last decade has identified Internet addiction as a new and often unrecognized clinical disorder that impact a user's ability to control online use to the extent that it can cause relational, occupational, and social problems. While much of the literature explores the psychological and social factors underlying Internet addiction, little if any empirical evidence exists that examines specific treatment outcomes to deal with this new client population. Researchers have suggested using cognitive behavioral therapy (CBT) as the treatment of choice for Internet addiction, and addiction recovery in general has utilized CBT as part of treatment planning. To investigate the efficacy of using CBT with Internet addicts, this study investigated 114 clients who suffered from Internet addiction and received CBT at the Center for Online Addiction. This study employed a survey research design, and outcome variables such as client motivation, online time management, improved social relationships, improved sexual functioning, engagement in offline activities, and ability to abstain from problematic applications were evaluated on the 3rd, 8th, and 12th sessions and over a 6-month follow-up. Results suggested that Caucasian, middle-aged males with at least a 4-year degree were most likely to suffer from some form of Internet addiction. Preliminary analyses indicated that most clients were able to manage their presenting complaints by the eighth session, and symptom management was sustained upon a 6-month follow-up. As the field of Internet addiction continues to grow, such outcome data will be useful in treatment planning with evidenced-based protocols unique to this emergent client population.

INTRODUCTION

Technology is changing the nature of problems people are having as well as how we treat them. According to the Pew Institute, surveys fielded in 2006 show that Internet penetration among adults in the United States has hit an all-time high. While the percentage of Americans who say they use the Internet has fluctuated slightly, Pew's most recent survey, fielded February 15 to April 6, 2006, showed that fully 73% of respondents (about 147 million adults) are Internet users, up from 66% (about 133 million adults) in its January 2005 survey.[1] As the Internet rapidly moved into homes, schools, and businesses, early studies estimated that nearly 6% of users suffered from Internet addiction.[2] Related studies suggested that the disorder is associated with social, academic, familial, and occupational impairment.[3–5] Symptoms often identified were a preoccupation with the Internet, an inability to control use, hiding or lying about the behavior, psychological withdrawal, and continued use despite consequences of the behavior.

Center for Online Addiction, Bradford, Pennsylvania.

Over the years, the concept of Internet addiction has grown in terms of its acceptance as a legitimate clinical disorder often requiring treatment.[6] Hospitals and clinics have emerged with outpatient treatment services for Internet addiction recovery such as the Illinois Institute for Addiction at Peoria Hospital and McLean Hospital, a Harvard Medical School affiliate. In some instances, addiction rehabilitation centers such as Sierra Tucson in Arizona have admitted people with Internet addiction into inpatient care, and college campuses have started support groups to help students who are addicted to the Internet.[7] While the mental health field has gradually developed a treatment infrastructure for Internet addiction, little has been empirically studied on specific therapy modalities and their treatment outcomes with this emergent client population.

THE DYNAMICS OF INTERNET ADDICTION

One of the most common affects of Internet addiction is frequent time distortion.[8] In his studies, Greenfield found that online addicts feel a sense of displacement when online and are unable to manage central aspects of their lives because of their growing preoccupation with online use. They start to miss important deadlines at work, spend less time with their family, and slowly withdraw from their normal routines. They neglect social connections with their friends, coworkers, and communities, and their lives ultimately become unmanageable because of the Internet. As the addiction grows, they become consumed with their Internet activities, preferring online games, chatting with online friends, or gambling over the Internet, gradually ignoring family and friends in exchange for solitary time in front of the computer.

In a study conducted by the Stanford Institute for the Quantitative Study of Society, researchers found that use of the Internet could lead to loneliness and a decline in social engagement.[9] While controversial, the researchers concluded that "the more hours people use the Internet, the less time they spend in contact with real human beings." In a 2-year longitudinal study, Kraut and his colleagues[10] randomly selected families who were given computers and instruction on Internet use, and after a 2-year follow-up, higher levels of depression and loneliness were reported by respondents who used the Internet as little as a few hours a week. In fact, the study reported that greater use of the Internet led to shrinking social support and happiness and increases in depression and loneliness. In studies specific to ad-dictive use of the Internet, Young found that social isolation was directly associated with compulsive Internet use in nearly 56% of 396 cases of online ad-dicts she surveyed.[4] Morahan-Martin found that loneliness was correlated with excessive online use among college students,[11] and various studies on online relationships, specifically online affairs, found that such virtual relationships led to marital discord, separation, and possibly divorce.[12]

For those suffering online addictions to pornography or sex chat rooms or those having an online affair, changes in sexual behavior offline often occurred.[13,14] In several cases, Internet addicts used online sex chat rooms or online pornography to replace sexual intimacy with real-life partners and, over time, completely withdrew into the computer to meet all their sexual needs.

According to some addiction theorists,[15,16] ad-dictions accomplish something for the person, however illusory or momentary these benefits may actually be. Because of the mental pleasure that people find in their addictions, they begin to behave more intensely about them. For example, an alcoholic is often driven to drink at moments of excessive stress or an overeater is often driven to binge on food during moments of tension. In each case, the compulsive behavior serves to reduce the underlying emotional tension and serves as a reward for future behavior. In a similar fashion, it has been suggested that Internet addicts turn to the computer to find relief from moments of painful states of mental tension and agitation present in their lives.[6] Greenfield postulated that the Internet is not as benign as we might think and has powerful mood-altering capabilities. Over 29% of the Internet addicts he studied reported using the Internet to "alter their mood or escape on a regular basis."[8] In such instances, he found that their use of the computer was less about using it as a tool and more about finding a psychological escape to cope with life's problems. Because the addiction serves a useful purpose for the addict, the sensation or attachment can grow to such proportions that life becomes unmanageable.

APPLYING COGNITIVE BEHAVIORAL THERAPY

Researchers have likened Internet addiction to addictive syndromes similar to impulse-control disorders on the Axis I Scale in the DSM[17–21] and utilized various forms of DSM-IV-based criteria to define Internet addiction. Cognitive behavioral therapy (CBT) has been shown to be an effective treatment for compulsive disorders such as inter-

mittent explosive disorder, pathological gambling, and trichotillomania.[22] CBT has also been effective in treating substance abuse, emotional disorders, and eating disorders.[23,24]

CBT is a familiar treatment based on the premise that thoughts determine feelings. Patients are taught to monitor their thoughts and identify those that trigger addictive feelings and actions while they learn new coping skills and ways to prevent a relapse. CBT usually requires 3 months of treatment, or approximately 12 weekly sessions. The early stage of therapy is behavioral, focusing on specific behaviors and situations in which the impulse-control disorder causes the greatest difficulty. As therapy progresses, there is more of a focus on the cognitive assumptions and distortions that have developed and the effects of these on behavior. This treatment involves assessment of the type of distortion, problem-solving skills and coping strategies training, modeling in therapy, support groups, and keeping thought journals.[24]

Cognitions

Addictive thinkers, for no logical reason, will feel apprehensive as though anticipating disaster.[16] While addicts are not the only people who worry and anticipate negative events, they tend to do so more often than other people. Young suggested that this type of catastrophic thinking might contribute to compulsive Internet use in providing a psychological escape mechanism to avoid real or perceived problems.[25] Subsequent studies hypothesized that other maladaptive cognitions such as overgeneralizing or catastrophizing, negative core beliefs, and cognitive distortions also contribute to compulsive use of the Internet.[26–28] Young hypothesized that those who suffer from negative core beliefs may be the ones who are most drawn to the anonymous interactive capabilities of the Internet in order to overcome these perceived inadequacies.[25] She suggested that cognitive restructuring should be used to address underlying negative core beliefs, cognitive distortions, and rationalizations such as "Just a few more minutes won't hurt" for effective management of the patient's primary symptoms.

Behavior

In cases of Internet addiction, abstinence recovery models are not practical because computers have become such a salient part of our daily lives. Therefore, clinicians have generally agreed that moderated and controlled use of the Internet is most appropriate to treat Internet addiction. Behavior therapy is the initial focus of recovery examining both computer behavior and non-computer behavior.[29] Computer behavior deals with actual online usage with a primary goal of abstinence from problematic applications while retaining controlled use of the computer for legitimate purposes. For example, a lawyer addicted to Internet pornography would need to learn to abstain from adult Web sites while still being able to access the Internet to conduct legal research and to e-mail clients. Non-computer behavior focuses on helping clients develop positive lifestyle changes for life without the Internet. Life activities that do not involve the computer are evaluated and may include relationship function, social function, and occupational function.

Young suggests using a daily Internet log to evaluate computer behavior and establish a baseline for clinical treatment.[18] Once a baseline has been established, behavior therapy is used to relearn how to use the Internet to achieve specific outcomes, such as moderated online usage and, more specifically, abstinence from problematic online applications and controlled use for legitimate purposes. Behavior management for both computer usage and adaptive non-computer behavior focuses on present and overt behavior.[18] Techniques involved may include assertion training, behavioral rehearsal, coaching, cognitive restructuring, desensitization, modeling, reinforcement, relaxation methods, self-management, or new social skills.

While many researchers have suggested treatment approaches and recovery strategies to address Internet addiction, little has been studied on actual treatment outcomes. Therefore, this study employed a survey research design to assess the utility and application of CBT in cases of Internet addiction. This study specifically examined client treatment success to reach targeted goals based on CBT counseling. Initially, this study examined client perceptions toward the therapist and the overall therapeutic context. Problematic online applications and problems caused by compulsive use were also evaluated to understand the nature of the client population utilized. Targeted goals included the symptoms most associated with Internet addiction, such as online time management, social isolation, relationship difficulties, sexual problems, and relapse. Goals were assessed over the course of 12 sessions and at 6 months after treatment termination.

METHODS

Participants

Participants were 114 clients seen through the Center for Online Addiction. Candidates were

screened using the Internet Addiction Test (IAT).[10] The IAT is a validated testing instrument that examines symptoms of Internet addiction such as a user's preoccupation with Internet use, ability to control online use, extent of hiding or lying about online use, and continued online use despite consequences of the behavior. Clients who met the criteria were included in the study, and those who exhibited high-risk behaviors, such as histories of psychological trauma, sexual abuse, or Axis II pathology, were excluded and sent for referrals.

Procedures

The Center for Online Addiction was established in 1995, and its Web site at www.netaddiction.com provides education, support, and treatment to people concerned about Internet addiction. Clients can seek treatment through traditional outpatient services utilizing individual or family counseling services. Individual adult clients requesting treatment were screened for Internet addiction using the IAT. Those classified for inclusion in the study completed an intake counseling form administered during the initial session that evaluated information related to compulsive use of the Internet as part of this study.

Once an appointment had been scheduled, sessions were conducted between the client and the principle investigator. Initial sessions gathered familial background, the nature of the presenting problem, its onset, and severity. Cognitive-behavioral interventions were utilized to address presenting symptoms related to computer use, specifically abstinence from problematic online applications and strategies to control online use. Counseling also focused on behavioral issues or other underlying factors contributing to online abuse, such as martial discord, job burnout, problems with coworkers, and academic troubles, depending on the unique situation of each client. Current use of the Internet was routinely evaluated, and treatment outcomes were evaluated after the 3rd, 8th, and 12th online session; and upon 6-month follow-up.

Materials

The Client Outcome Questionnaire was constructed for the purpose of this study. Clients were administered the questionnaire after the 3rd, 8th, and 12th online sessions and upon a 6-month follow-up. It included 12 items that addressed the client's behavior patterns and treatment successes during the counseling process. Questions rated how effective counseling was at helping clients achieve targeted treatment goals associated with Internet addiction recovery. Questions assessed motivation to quit abusing the Internet, ability to control online use, engagement in offline activities, improved relationship functioning, and improved offline sexual functioning (if applicable). Questions were rated along a 5-point Likert scale (0 = not at all; 5 = extremely helpful). The quality of the counseling relationship was assessed with questions such as "Rate your ability to develop a supportive therapist-client relationship," "Rate the overall quality of the counseling environment," and "Rate the overall quality of the counseling relationship." The nature of the presenting problem and related outcome goals were also assessed with questions such as "Rate how effective online counseling was at motivating you to abstain from abusing the Internet," "Rate your ability to control your computer use," "Rate how your ability to function in offline relationships has improved," "Rate your ability to abstain from sexually explicit material on the Internet," "Rate how your ability to engage in offline activities away from the computer has improved," "Rate how effective online counseling was at helping you achieve sobriety from problematic online applications."

Instrument validation

To determine the validity and reliability of the questionnaire, mental health practitioners in the CBT field evaluated the instrument, a pilot test was also conducted. Three therapists who practiced some form of CBT were asked to evaluate the content of the instrument and to comment on the clarity and appropriateness of the items. Before implementing the survey, a pilot test was administered to five randomly selected college students to check the time required to finish the questionnaire, to determine if there were ambiguity and format problems, and to test the clarity of questionnaire items. According to the results, the researcher made the necessary modifications. Data were analyzed and percentages with frequencies were calculated for the dichotomous items, and content analyses were used to evaluate qualitative data.

RESULTS

One hundred fourteen clients were evaluated. Demographically, 42% of clients were women and 58% were men. Mean ages for males and females were quite similar: 38 and 46 respectively. Eighty-four percent were Caucasian, 5% were African American, and 11% were of Asian decent. Twenty-

TABLE 1. PROBLEMATIC ONLINE APPLICATIONS BY GENDER

Online activity	Females	Males	Total
Chat (sexual)	30% (34)	10% (11)	40% (45)
Chat (general)	4% (5)	0% (0)	4% (5)
Pornography	0% (0)	30% (34)	30% (34)
Gamgling	0% (0)	10% (11)	10% (11)
Gaming	2% (2)	8% (10)	10% (12)
Auctin houses	4% (50	0% (0)	4% (5)
Shopping	2% (2)	0% (0)	2% (2)
Total	42% (48)	58% (65)	100% (114)

eight percent held a masters degree or doctorate, 61% held a 4-year bachelors degree, and 11% had earned a high school diploma.

Table 1 outlines the problematic applications reported by clients based on gender. Men were most addicted to online pornography (30%), sexual online chat rooms (10%), online gambling (10%), and online gaming (8%). Women were most addicted to online chat rooms (30%), both sexual and general online auction houses (4%), and in a minority of cases, one woman was addicted to online gaming (2%) and one to online shopping (2%). Results suggest that chat rooms were the most problematic online application for the general population of female clients, followed by online pornography, predominantly among male clients.

Table 2 categorizes the problems associated with compulsive online behavior. Time management was the most reported problem with 96% citing difficulties controlling their online use and failing at repeated attempts to cut down or curb use. Relationship problems were reported by 85% of clients, citing problems such as arguments with a spouse or significant other because of the amount of time they spent at the computer. In many cases, clients lied to others about the extent of their online use, or their

excessive use had caused marital problems such as separation or divorce because of romantic liaisons over the Internet or online affairs. Sexual problems were reported by 75% of clients. Specifically, they indicated a decreased interest in sexual relationships with offline partners, preferring to spend time in sex chat rooms or looking at online porn to spending time normally engaged in sexual activity with a spouse. Work problems such as reduced job productivity, missed deadlines, and in extreme cases, job loss due to their online habit, were reported by 71% of clients. Financial problems were reported by 42% of clients who had incurred debt through subscription fees to online porn sites, gambling losses at virtual casinos, or shopping online or at auction houses. Physical problems such as sleep deprivation, back strain, and eyestrain due to long hours sitting in front of the computer were reported by 29% of clients. Academic problems were reported by 15% of clients who were full-time students and had developed poor study habits, missed classes, or didn't sleep enough to concentrate on school because of their online use.

Table 3 presents data related to the quality of the therapist–client relationship. In examining how comfortable clients felt working with the therapist,

TABLE 2. PROBLEMS ASSOCIATED WITH COMPULSIVE USE OF THE INTERNET

Problem	Yes responses	No responses	Blank responses	Totals
Time	96% (109)	4% (5)	0% (0)	100% (114)
Relationship	85% (97)	15% (17)	0% (0)	100% (114)
Sexual	75% (85)	21% (24)	4% (5)	100% (114)
Work	71% (81)	29% (33)	0% (0)	100% (114)
Financial	42% (48)	58% (66)	0% (0)	100% (114)
Physical	29% (33)	71% (81)	0% (0)	100% (114)
Academic	15% (17)	81% (92)	4% (5)	100% (114)

TABLE 3.   RATINGS OF THERAPIST-CLIENT INTERACTION OVER 3, 8, AND 12 SESSIONS AND 6-MONTH FOLLOWUP

Therapy variable	Mean rating of therapy variables measured (SD)			
	3rd session	8th session	12th session	6 months
Ability to develop a supportive therapist–client relationship				
M	3.85	4.28	4.58	3.96
SD	0.94	0.71	0.46	0.73
Overall quality of the counseling environment				
M	3.56	4.12	4.36	3.90
SD	0.71	0.76	0.52	0.91
Overall quality of the counseling relationship				
M	3.35	4.25	4.55	4.10
SD	1.11	0.98	0.75	0.78

clients rated their ability to develop a supportive therapist–client relationship by the 3rd session on a mean of 3.85 (SD = 0.94). By the 8th session, that number increased to 4.28 (SD = 0.71), and by the 12th session, the mean increased to 4.58 (SD = 0.46). Sessions were terminated after the 12th session, and records were kept of clients' accounts. Six months after termination, clients were contacted again and re-administered the Client Outcome Questionnaire. Upon 6-month follow-up, clients rated the quality of the supportive therapist–client relationship on a mean of 3.96 (SD = 0.73). Clients rated the quality of the counseling environment on a mean of 3.56 (SD = 0.65) by the 3rd session, 4.12 (SD = 0.76) by the 8th session, 4.36 (SD = 0.52) by the 12th session, and 3.90 (SD = 0.65) upon 6-month follow-up. In terms of the overall quality, clients rated the therapist on a mean of 3.35 (SD = 1.11) by the 3rd, 4.25 (SD = 0.98) by the 8th session, 4.55 (SD = 0.75) by the 12th session, and 4.10 (SD = 0.78) upon 6-month follow-up. Results suggest that clients found the counseling environment comfortable to conduct therapeutic work, and their relationship with the therapist improved the longer that they were in counseling.

Table 4 outlines the average outcome goal ratings reported after the 3rd, 8th, and 12th sessions, and upon 6-month follow-up. Six factors were evaluated: motivation; ability to control use; relationship function; sexual function; time spent in offline activities, including time with family, social outings, and time at an extracurricular hobby; and overall ability to abstain from problematic online applications. Clients' motivation to stop abusing the Internet improved along a mean of 4.22 (SD = 1.04) by

the 3rd session, 3.96 (SD = 0.54) by the 8th session, 4.54 (SD = 0.52) by the 12th session, and 4.36 (SD = 0.63) upon 6-month follow-up. Clients' ability to control their computer use improved along a mean of 3.95 (SD = 1.21) by the 3rd session, 4.06 (SD = 0.87) by the 8th session, 4.33 (SD = 0.58) by the 12th session, and 4.22 (SD = 0.75) upon 6-month follow-up. Clients' ability to function in offline relationships improved by a mean of 2.95 (SD = 0.71) by the 3rd session, 3.66 (SD = 0.63) by the 8th session, 4.42 (SD = 0.52) by the 12th session, and 3.99 (SD = 0.73) upon 6-month follow-up. The ability to abstain from sexually explicit online material improved along a mean of 2.15 (SD = 0.91) by the 3rd, 2.99 (SD = 0.94) by the 8th session, 3.26 (SD = 1.02) by the 12th session, and 3.16 (SD = 1.12) upon 6-month follow-up. The ability to engage in offline activities away from the computer improved along a mean of 2.67 (SD = 0.89) by the 3rd session, 4.46 (SD = 0.74) by the 8th session, 4.66 (SD = 0.52) by the 12th session, and 4.87 (SD = 0.55) upon 6-month follow-up. The ability of CBT counseling to help clients achieve sobriety from problematic applications improved along a mean of 3.45 (SD = 0.61) by the 3rd session, 4.28 (SD = 0.69) by the 8th session, 4.55 (SD = 0.48) by the 12th session, and 4.35 (SD = 0.73) upon 6-month follow-up.

Results suggest that most clients showed continuous improvement by the 3rd session, effective symptom management by the 8th and 12th sessions, and overall improved symptom maintenance upon 6-month follow up. Specifically, clients were able to maintain motivation to quit abusing the Internet and improve online time management most effectively early in the counseling process. More com-

TABLE 4. OUTCOME GOALS ASSESSED OVER 3, 8, AND 12 SESSIONS AND 6-MONTH FOLLOWUP

Outcome variable	Mean rating of outcome variables measured (SD)			
	3rd session	8th session	12th session	6 months
Motivation				
M	4.22	3.96	4.54	4.36
SD	1.04	0.54	0.52	0.63
Time management				
M	3.95	4.06	4.33	4.22
SD	1.21	0.87	0.58	0.75
Relationship function				
M	2.95	3.66	4.42	3.99
SD	0.71	0.63	0.52	0.73
Sexual function				
M	2.15	2.99	3.26	3.16
SD	0.91	0.94	1.02	1.12
Engage in offline activities				
M	2.67	4.46	4.66	4.87
SD	0.89	0.74	0.52	0.55
Abstinence from problematic applications				
M	3.45	4.28	4.55	4.35
SD	0.61	0.69	0.45	0.73

plex issues such as rekindling offline relationships and engaging in offline activities improved later in the therapy process, usually by the 12th session. Notably, improving sexual function offline was the most difficult outcome to achieve. Many clients noted that while they were able to abstain from sex chat or online pornography, they had troubled marital relationships; five were in the process of a divorce and thus unable to regain a satisfying sexual relationship offline with their partners.

CONCLUSIONS

One hundred fourteen clients were evaluated on the Internet Addiction Scale. Demographically, clients tended to be male, Caucasian, and had completed at least a 4-year college degree. Interestingly, clients tended to be middle-aged and were looking for help with a situation that was relatively new in their lives. Most clients were able to manage their presenting complaints by the 8th online session. Most were able to fully manage their symptoms by the 12th session. Clients reported that CBT counseling was effective at ameliorating the common symptoms of online addiction: motivation to quit, online time management, social isolation, sexual dysfunction, and abstinence from problematic online applications. Upon 6-month follow-up, most clients were able to maintain symptom management and continued recovery.

In this study, cognitive-behavioral techniques were applied, and the data suggested that clients were able to decrease thoughts and behaviors associated with compulsive Internet use. Rationalizations that led to compulsive use were reduced, behaviors surrounding computer use in general were improved, and proactive lifestyle changes to adapt to life without the Internet were primarily achieved. Clients were able to achieve relapse prevention over a 6-month period.

While this study provides one of the first studies to empirically examine the efficacy of using CBT with Internet addicts, further research should continue to investigate long-term treatment outcome effects of CBT with larger client populations. CBT is still only one treatment approach, so areas for future research should also explore systematic comparisons with other treatment modalities such as psychoanalysis, gestalt, group counseling, or in vivo counseling within an online community to determine their therapeutic impact and efficacy. Future studies should also investigate treatment differences among the various types of Internet abuse.

Subtypes of Internet addiction have been identified in the literature and include Internet gambling, online gaming, and Internet pornography addictions. Studies should examine if treatment differences exist using CBT to determine if outcomes vary along each subtype.

Further, because this study relied on self-reported data to gage changes in online behavior, psychological health status, and social functioning, the results may be biased. Because patient self-reports may be inaccurate, future studies should include that the reports be verified by relatives or friends close to the client and/or by periodic computer monitoring to ensure greater reliability of self-reported data. Finally, as the mental health field devotes more research and resources to Internet addiction recovery, future studies should evaluate how specific treatment intervention impacts long-term recovery. Traditionally, addiction treatment programs for alcoholism and drug abuse have offered patients a mix of treatment approaches. A promising new strategy involves matching patients to interventions specific to their needs. In this same manner, matching which types of Internet addiction respond best to which treatment can increase treatment effectiveness, and such treatment matching is likely to increase long-term recovery.

REFERENCES

1. Pew Internet and American Life Project. (2006) Internet penetration and impact. Available at: www.pewinternet.org/pdfs/PIP_Internet_Impact.pdf. Accessed on: November 17, 2006.

2. Greenfield D. Internet addiction: disinhibition, accelerated intimacy and other theoretical considerations. Boston, MA: Paper presented at the 107th annual meeting of the American Psychological Association, August 22, 1999.

3. Brenner V. Psychology of computer use: VLVII. Parameters of Internet use, abuse and addiction: the first 90 days of the Internet usage survey. Psychological Reports 1997; 80:879–82.

4. Young KS. Internet addiction: the emergence of a new clinical disorder. CyberPsychology & Behavior 1998; 1:237–44.

5. Morahan-Martin J, Schumacher P. Incidence and correlates of pathological Internet use among college students. Computers and Human Behavior 1999; 16:1–17.

6. Young KS. (2004) Internet addiction: the consequences of a new clinical phenomena. In: Doyle K. ed. *Psychology and the new media*. Thousand Oaks, CA: American Behavioral Scientist, pp. 1–14.

7. Kandell, JJ. Internet addiction on campus: the vulnerability of college students. CyberPsychology & Behavior 1998; 1:11–7.

8. Greenfield DN. (1999) *Virtual addiction*. Oakland, CA: New Harbinger Publications.

9. Nie N, Erbring L. Debating the societal effects of the Internet: connecting with the world. Public Perspective 2000; 11:42–3.

10. Krant R, Patterson M, Lundmark V, Kiesler S, Mukopadhyay T, Scherlis W. Internet paradox: a social technology that reduces social involvement and psychological well-being? American Psychologist 1998; 53:1017–31.

11. Morahan-Martin J. The relationship between loneliness and Internet use and abuse. CyberPsychology & Behavior 1999; 2:431–40.

12. Young K, Cooper A, Griffin-Shelley E, Buchanan J, O'Mara J. Cybersex and infidelity online: implications for evaluation and treatment. Sexual Addiction and Compulsivity 2000; 7:59–74.

13. Cooper A, Putnam DE, Planchon LA, Boies SC. Online sexual compulsivity: getting tangled in the Net. Sexual addiction & compulsivity. Journal of Treatment and Prevention 1999; 6:79–104.

14. Schneider J. (2000) Effects of cybersex addiction on the family: results of a survey. In: Cooper A., ed. *Cybersex: the dark side of the force*. Philadelphia: Brunner Routledge, pp. 31–58.

15. Peele S, Brodsky A. (1991) *The truth about addiction and recovery: the life process program for outgrowing destructive habits*. New York: Simon & Schuster.

16. Twerski A. (1990) *Addictive thinking: understanding self-deception*. New York: HarperCollins.

17. Young KS. An empirical examination of client attitudes towards online counseling. CyberPsychology & Behavior 2005; 8:172–7.

18. Young KS. (1998) *Caught in the Net: How to recognize the signs of Internet addiction and a winning strategy for recovery*. New York: John Wiley & Sons.

19. Orzack MH. Computer addiction: is it real or is it virtual? Harvard Mental Health Letter 1999; 15:8.

20. Beard KW, Wolf EM. Modification in the proposed diagnostic criteria for Internet addiction. CyberPsychology & Behavior 2001; 4:377–83.

21. Shapira NA, Lessig MC, Goldsmith TD, Szabo ST, Lazoritz M, Gold MS, Stein DJ. Problematic Internet use: proposed classification and diagnostic criteria. Depression and Anxiety 2003; 17:207–16.

22. Hucker SJ. (2004) Disorders of impulse control. In: O'Donohue W, Levensky E, eds. *Forensic psychology*. New York: Academic Press.

23. Beck AT. (1979) *Cognitive therapy and the emotional disorders*. New York: Plume.

24. Beck AT, Wright FD, Newman CF, Liese BS. Cognitive therapy of substance abuse. The Guilford Press. 2001.

25. Young KS. (1999) The evaluation and treatment of Internet addiction. In: VandeCreek L, Jackson T, eds. Innovations in clinical practice: a source book. Sarasota, FL: Professional Resource Press, pp. 19–31.

26. Caplan SE. Problematic Internet use and psychosocial well-being: development of a theory-based cognitive-

behavioral measurement instrument. Computers in Human Behavior 2002; 18:553–75.

27. Davis RA. A cognitive behavioral model of pathological Internet use. Computers in Human Behavior 2001; 17:187–95.

28. LaRose R, Mastro D, Eastin MS. Understanding Internet usage: a social-cognitive approach to uses and gratifications. Social Science Computer Review 2001; 19:395–413.

29. Hall AS, Parsons J. Internet addiction: college students case study using best practices in behavior therapy. Journal of Mental Health Counseling 2001; 23:312–22.

Address reprint requests to:
Dr. Kimberly S. Young
Professor of Management Sciences
School of Business
St. Bonaventure University
St. Bonaventure, NY 14778

E-mail: kyoung@sbu.edu