

Internet Addiction: Fact or Fiction?

Internet addiction, or problematic Internet use, affects close to 1% of the general population of the United States, according to a study from Stanford University School of Medicine, in California, presented by Elias Aboujaoude, MD, in a talk here at the Anxiety Disorders Association of America 28th Annual Meeting.

While further studies are needed to determine whether or not this is a legitimate new disorder that should be added to the *Diagnostic and Statistical Manual of Mental Disorders*, 5th ed (*DSM-V*), patients with problematic Internet use are showing up now at mental health clinics, he said.

"I do think that Internet addiction is a public health problem," Dr. Aboujaoude told *Medscape Psychiatry*, adding, "As mental health professionals, we really should ask about people's online lives."

What Is Internet Addiction?

Currently, about 71% of the US population has access to the Internet, and this new medium has revolutionized such life aspects as shopping, entertainment, and political campaigns, said Dr. Aboujaoude, but for some individuals, Internet use can become problematic.

Kimberly S. Young, PhD, from the University of Pittsburgh, in Bradford, Pennsylvania, has defined Internet addiction, based on criteria from the *DSM-IV* for pathological gambling, as having 5 or more of the following symptoms: preoccupation with the Internet, a need to spend more time online to get the same satisfaction, unsuccessful attempts to decrease use, feeling restless or irritable when attempting to cut back, often staying online much longer than intended, secretive behavior/lying about online pursuits, distress or dysfunction as a result of this behavior, or use of the Internet to self-medicate (eg, to overcome depression).

Internet addiction shares features in common with impulse control, substance abuse, and obsessive-compulsive disorders, Dr. Aboujaoude noted.

It is similar to impulse control disorder, in that people experience a surge in anxiety and an urge to perform an act that is pleasurable in the moment but leads to long-term distress. The *DSM-IV* recognizes some impulse control disorders (trichotillomania, kleptomania, pyromania, and impulsive gambling), while others (impulsive skin picking, compulsive cruising for sex, and compulsive shopping) fall into the not-otherwise-specified (NOS) category, which is where Internet addiction might fit, he said.

Like substance abuse, problematic Internet use results in a dopaminergic surge in the brain. More and more Internet use is needed to achieve a high, and when going without the Internet, the person might suffer from withdrawal symptoms.

Like obsessive-compulsive disorder (OCD), Internet addiction can include ritualized, repetitive behavior. However, unlike OCD, it offers a pleasurable high, and people can lose track of time.

How Common Is It?

Various studies have reported a prevalence of Internet addiction as high as 3% to 10% of the population, but these studies suffered from self-selection bias, since they were online surveys, Dr. Aboujaoude said.

Two recent community studies of adolescents reported a much lower prevalence. A Korean study of over 1500 15- and 16-year-old students who replied to a questionnaire reported an Internet addiction prevalence of 1.6%, with the same rates among boys and girls (Kim K et al. *Int J Nurs Stud.* 2006;43:185-192). Similarly, a Norwegian study of over 3200 adolescents found that 1.98% of this population was addicted to the Internet.

To investigate problematic Internet use in the adult general population in the United States, Dr. Aboujaoude and colleagues performed a random-digit-dial telephone survey of 2513 adults in 50 states (Aboujaoude E et al. *CNS Spectr.* 2006;11:750-755).

Of the people who were contacted, 56.3% replied to the survey. The respondents had an average age of 48 years.

From 4% to 14% of the survey respondents showed evidence of some aspects of problematic Internet use:

- 4% said they were preoccupied with the Internet when they were offline.
- 6% had personal relationships that suffered as a direct consequence of inappropriate Internet use.
- 6% regularly went online to escape from depression or negative moods.
- 9% were secretive and felt they had to hide their Internet activities.
- 11% stayed online regularly for longer than they intended.
- 14% had a very hard time staying offline 4 days in a row.

Defining problematic Internet use as meeting 3 criteria (preoccupation with the Internet when offline; unsuccessful attempts to cut back use or often staying online longer than intended; and interference with personal relationships caused by Internet use), the researchers found a prevalence of problematic Internet use of 0.7%, which was the same for both men and women.

"Potential markers of problematic Internet use seem present in a sizable proportion of adults," the team concluded. Future studies are needed to determine whether this is a separate pathological behavior or whether it is a symptom of other psychological pathologies.

In June 2007, the American Medical Association submitted a formal request to the National Institutes of Health, the Centers for Disease Control and Prevention, and the American Psychiatric Association asking that more research be conducted into the long-term consequences of excessive video games and other Internet pursuits.

Potential Treatments

Case reports suggest that the opioid receptor antagonist naltrexone, which has been studied in gambling and other impulse control disorders, might be useful to treat patients who have problematic Internet use.

Eric Hollander, MD, from Mount Sinai School of Medicine, in New York, and colleagues tested the use of the antidepressant escitalopram (*Lexapro*, Forest Pharmaceuticals) in 19 adult subjects who had impulsive-compulsive Internet usage disorder, defined as time-consuming, uncontrollable, distressing Internet usage resulting in social, occupational, or financial difficulties (Hollander E et al. *J Clin Psychiatry.* February 27, 2008;e1-e5). Study participants took escitalopram in an open-label phase for 10 weeks, and then those who responded were randomized in a double-blind, placebo-controlled 9-week phase to continue with this drug or switch to placebo. "The good news is that during the open-label phase they had a very healthy response to the drug; on average the number of hours spent online went from 36

hours to 16 hours," said Dr. Aboujaoude. On the other hand, in the double-blind phase, both placebo and treatment groups continued to do well. Further research in larger trials is needed to investigate the efficacy of this and other agents for problematic Internet use, the authors conclude.

Other research has focused on cognitive behavioral therapy (CBT) for Internet addiction. "The approach is not complete abstinence, since that's not so practical," said Dr. Aboujaoude, but rather treatment encourages patients to avoid problematic online behaviors and develop healthy alternatives — for example, to go from being online 8 hours a day to 3 hours a day. The cognitive aspect of CBT involves confronting faulty cognitions such as catastrophic thinking, overgeneralizing, and negative core beliefs and trying to reverse them.

It is important to also treat any comorbid conditions, he stressed, adding that a significant proportion of patients with problematic Internet usage also have a mood disorder, especially depression and other anxiety conditions, for which established treatments exist.

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