

Internet

Gaming Addiction

♥ *Cindy Burkhardt Freeman*

ABSTRACT

Some have argued that the proliferation of personal computers and the widespread use of the Internet have greatly benefited society. However, a recognized problem occurs as persons spend excessive amounts of time online, which may lead to problems in other areas of their lives. Peer-reviewed articles and articles in the media have shown massively multiplayer online role-playing games to be one area of concern. All health care providers should be aware of how to recognize and treat this potential problem. To date, few randomized controlled trials have been conducted to evaluate treatment for this type of addiction.

Keywords: Internet addiction, Internet gaming addiction, massively multiplayer online role-playing games, online gaming



BILL, a 30-year-old college-educated man, seeks treatment because his wife thinks he should have a psychiatric evaluation. Her main concern is the amount of time he spends in the virtual world of the massively multiplayer online role-playing games (MMORPG).

Jim, a 41-year-old computer programmer, seeks treatment for severe depression and suicidal ideation. His wife of 13 years is having an online affair in an MMORPG.

Michelle, a 39-year-old recovering alcoholic, seeks treatment for depression worsened by the long periods of time her fiancé spends playing an MMORPG with his brother.

George, a 27-year-old, who is employed off and on and lives with his mother, seeks treatment after repeatedly being found “passed out” in front of the computer. He has used methamphetamines to stay awake for extended periods (up to 32 hours) to play an MMORPG. He has a history of obsessive behaviors and depressive tendencies along with alcohol and drug abuse.

As one can see, assistance is sought by gamers or those who care about them. This is only a brief description of four patients seen in practice and their presenting problems. At the end of the article, a brief synopsis of their treatment and outcomes is provided.

Introduction

The term internet addiction was first used in 1995 when New York psychiatrist, Ivan Goldberg,¹ described it as a joke to a group of psychiatrists with whom he communicated with online. This addiction was formally presented by Kimberly Young² at the 1996 American Psychological Association’s annual convention. Although Goldberg (personal communication, March 2007) and others believe the problem to be a symptom of an impulse control disorder, Young likens Internet addiction to other addictions in that it can cause a loss of control, social isolation, problems in marital and family relationships, and educational or employment problems. Her research has described cravings and physical withdrawal symptoms.

A press release from the American Psychiatric Association dated June 21, 2007, stated that, although it does not currently view any type of “video game addiction” to be a mental disorder, it would use the “latest and best science” when the association compiles the new edition of the *Diagnostic and Statistical Manual (DSM)* for publication.³

Background

Computers are used by many persons in all aspects of their work and personal lives. The Internet has made universal networking possible. Information is available 24 hours a day in all areas of interest for education, communication, and entertainment, much to the benefit of society.

However, the pursuit of information, the ability to communicate instantly with others, and the immersion into virtual gaming worlds may lead to problems in the real world if an excessive amount of time is spent online. The amount of time necessary to hone skills to play at a level required to advance in these games can be excessive.^{4,5}

Whether the term used is problematic computer use, online game addiction, computer addiction, or Internet addiction, this problem is not currently recognized as an official disorder by the American Psychiatric Association. Little information is available to guide diagnosis and management.⁶ Although what to call the problem and how to treat it are controversial, the literature about computer-related problematic behaviors has grown exponentially as the number of those affected increases.^{5,7,8} Researchers have proposed diagnostic criteria and created screening tools to help in the diagnosis of the problem.^{2,5,9-14}

Research in this area is still in the preliminary stages because few clinical trials and no meta-analyses have been done to evaluate treatment for this type of addiction.^{8,15} A review by Widyanto and Griffiths¹⁶ reports treatment recommendations based on case studies. Del’Osso et al¹⁷ discuss treatment options for compulsive-impulsive Internet usage disorder along with other impulse control disorders

and treatment options based on some clinical trials. For now, most clinicians are treating the problem as a subtype of an impulse control disorder.

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Table 1. Glossary of Terms

Term	Definition
Addiction	The compulsive, continued use of a substance or behavior known by the user to be harmful. ²⁶ A brain disease that manifests as compulsive behavior. ²⁷
Computer addiction	A compulsive use of computers.
Dependence	The state of being dependent on or unduly subjected to the influence of something or someone. Habituation. ²⁶
Impulse control disorder	Any of various types of psychiatric disorders characterized by a tendency to gratify a desire or impulse despite the consequences to self or others. ²⁸
Internet	A system of networks that connects computers around the world. ²⁶
Internet addiction	A compulsive use of the Internet; problematic Internet use. ²⁹
MMORPG	Massively multiplayer online role-playing games. A particular genre of online games in which players from around the world create their own characters that interact with other players in the game's virtual world. Players gain points with which to buy powers and advance in the never-ending game played in real time. ^{5,15}
Online game	A game played while connected to the Internet.
Video game	An electronic or computerized game played by moving images on a screen or monitor.
Virtual reality	An illusion of reality created by a computer, existing although not in actual form, that is, a computer image. ³⁰

In defining addiction as compulsion to use, a brain disease, and a chronic medical disorder, Kleber and Galanter¹⁸ speak primarily of addiction to drugs. However, other behaviors with excessive involvement in activities such as gambling, compulsive shopping, sex, and eating are also labeled as addictions.^{4,19-23}

Problematic computer usage appears to be affecting patients worldwide. In Korea, a government agency was created to address the growing problem. The Chinese government has placed a ban on the opening of new Internet cafes and has opened a treatment center for citizens with Internet-related problems at Beijing Military Region Central Hospital. The Illinois Institute for Addiction Recovery at Proctor Hospital; the Impulse Control Disorders Clinic at Stanford University; the Computer Addiction Services of McClean Hospital; Smith & Jones Addiction Consultants in Amsterdam; The Center, Inc., with locations in Washington state and Ecuador; and the Center for Online Addiction (COLA) at the University of Pittsburgh, Bradford Campus, are some of the specialized treatment centers addressing these types of problems. Web sites have also been developed to provide information and support for gamers and their families and friends.

Role-playing games from the early tabletop versions to MMORPGs are linked to controversy. In the 1980s, the game *Dungeons and Dragons* was thought to be

linked to Satanism, suicides, and cultlike activities.²⁴⁻²⁵ MMORPGs are similarly being scrutinized.

MMORPGs are a genre of online games. Glossary of relevant terms are defined in [Table 1](#). The actual term MMORPG was reportedly coined in 1998 by those responsible for introducing the MMORPG "Everquest."³¹ No person is noted with being the first to use the term. A game's creators design elaborate, detailed fantastical virtual worlds that are inhabited by single players who create their own characters and form networks or guilds with other players within games to achieve common goals, fight enemies, live and work in communities, and accumulate points with which they buy skills, weapons, or other accessories. A game's storyline evolves in real time, and, although guided by the game's creators, the players themselves make many decisions. With players around the world, any game can be played 24 hours a day. Players only have input when actually online, leading many to be reluctant to leave the virtual environment to take care of routine tasks of daily living.^{5,15} In addition, many of these games charge monthly subscription fees that add to the cost of the original software. Legitimate revenues for MMORPGs in 2006 reached the billion-dollar mark with a forecast for continual exponential growth.³² Role-playing games account for approximately 14% of the computer and video game industry that as a

Table 2. Psychiatric Disorders Most Commonly Comorbid with Internet Gaming Addiction⁴²⁻⁴⁴

Mood Disorders
• Depressive disorders
• Bipolar disorders
• Substance-induced mood disorder
Anxiety Disorders
• Social phobia
• Generalized anxiety disorder
• Anxiety disorder NOS
Attentional Disorders
• Attention deficit disorder
• Attention deficit hyperactivity disorder
Substance Use Disorder
• Amphetamine (or amphetamine-like) abuse or dependence
• Cocaine abuse or dependence
• Cannabis abuse or dependence

whole amassed \$7.4 billion in sales in 2006.^{19,32} Some gamers choose to buy or sell items and characters through various methods not sanctioned by the software companies.

Groups at Risk

Just as not everyone who drinks alcohol becomes an alcoholic, not everyone who plays an MMORPG develops problematic behaviors or addiction. Although all ages, sexes, and social and cultural groups are susceptible to MMORPG addiction,^{33,34} persons born between 1977 and 1997 are most vulnerable. These young people have grown up with access to computers, video games, and the Internet. Time online may be spent in chat rooms, playing online games, surfing for information, instant messaging, or just checking email. Regardless of the activities one pursues online, staying online the equivalent time of a full-time job for nonessential purposes could lead to problems with one's ability to function in other areas of life.⁵ Work, relationships, responsibilities, and even personal health and hygiene may be neglected by persons who are unable to control the amount of time spent in on-line activities. The line between healthy and pathologic behaviors has historically been described as when the performance of life activities becomes problematic, whether this relates to drugs, alcohol, gambling, sex, shopping, eating, or any activity.^{30,31} Persons with addiction to MMORPGs or their loved ones may present to health care providers.³⁶ Whether the psychiatric symp-

toms precede MMORPG use or are a consequence of it, the result is the same. Game players who spend excessive amounts of time in virtual worlds have symptoms similar to persons with other addictions. They may get restless or irritable if they are unable to play. They may sacrifice time from family, friends, and work.⁹ They may spend increasing amounts of time playing and may totally lose track of the time. Some gamers describe entering a "zone" as a flow experience where hours may seem like seconds. Persons who experience this phenomenon appear more prone to addiction.^{39,40} These persons may lie about or misrepresent time spent playing. They may lose interest in other activities and continue to play despite negative consequences. According to Yee,³³ more than 40% of players consider themselves addicted to MMORPGs and 4.8% to 30% have made unsuccessful attempts to stop playing.

Comorbidities

The high percentage of psychiatric comorbidity in the substance-abusing population is well known.⁴¹ The percentage of comorbidity with Internet addiction is also the subject of research and thus not known at this time. Mood disorders, attentional disorders, and substance dependencies are cited as comorbidities.^{42,43,44} More specific information is available in Table 2. When comorbid disorders are addressed concurrently, patient outcomes are greatly improved.^{17,41}

Treatments

As with other addictions or dependencies, the most effective treatments are a combination of psychopharmacology and psychotherapy. Twelve-step programs have also shown promise.³⁸

The role of the neurotransmitters norepinephrine and dopamine in addiction to substances is widely accepted.^{18,45} When the addiction is a behavior and not a drug, research has shown dopamine and serotonin involvement.²⁰ Selective serotonin reuptake inhibitors and atypical antipsychotic medications alone and in combination have therapeutic effects in published clinical trials and case studies.⁴⁶⁻⁴⁸ Other treatment options studied for impulse control disorders include lithium and mood stabilizers, opioid antagonists, tricyclic antidepressants, selective serotonin and norepinephrine reuptake inhibitors, benzodiazepines, the norepinephrine dopamine reuptake inhibitor bupropion, and β -blockers.¹⁷

Although not necessarily related to all MMORPGs, the sexual nature of some games was noted.⁴³ Cybersex has been called the “crack cocaine of sex addiction,” and the addiction model of treatment is applied therapeutically. The function of the monoamine neurotransmitters, serotonin, norepinephrine, and dopamine, are used as the model for treating addictions and other compulsive behaviors.⁴² This area of research appears to be the future of all pharmacologic psychiatric treatment and is developing rapidly.

Implications for Practice

Wieland³⁶ provides recommendations for nurse practitioner psychotherapists, including cognitive behavioral therapy (CBT) and other therapies that increase insight into a person's behaviors. She also recommends psychopharmacology, the use of 12-step support groups, and other available addictions treatments. The aforementioned recent American Psychiatric Association news release describes the need for research in this area to revise the *DSM-V*.³ Perhaps the most difficult to understand issue about any type of addiction is the apparent indifference of the addict toward how his or her behavior affects those around him or her. It is easy to develop a countertransference toward the addict, and this attitude can never be therapeutic. Understanding the chronic nature of addiction or dependence to substances or behaviors is paramount in treatment. All practitioners need to be able to recognize persons affected and guide them in effective treatment.

Patient Updates

The following are the brief updates discussed earlier. For some patients other medication regimens were tried unsuccessfully before establishing the effective, therapeutic regimen. Not all cases are “cut and dry,” and not all cases are success stories, because patients are at times non-compliant with medications or psychotherapy. Addictions are many times difficult to treat. Countertransference issues make dealing with this population difficult for many practitioners. Understanding of the chronic nature and psychopathology of addictions and dependence can help clinicians be more therapeutic.

Bill has required inpatient treatment in a psychiatric facility on two occasions, resulting from severe depression with suicidal ideation and auditory hallucinations. His condition was diagnosed as bipolar disorder. He is currently stable on duloxetine, aripiprazole, and zolpidem.

Family relationships have improved, and he is doing well in his studies. He has enrolled in two college classes on video game technology and creation. Although CBT was recommended, Bill has never shown an interest in pursuing this option.

Jim has filed for divorce and moved into his own apartment. He appears to have resolved most of his issues, although he continues individual Cognitive behavioral therapy (CBT). He is considering filing for custody of his three children. He reports that his wife continues to engage in online game activity and doubts he can trust her again. He was treated with escitalopram for 1 year, at which time he elected to stop medication and appears to be doing well.

Michelle is medication compliant in dealing with her bipolar disorder and remains with her fiancé. Her medications are oxcarbazepine and citalopram. Her fiancé has decreased the amount of time he spends playing online games because he is now working full time and has agreed that he will no longer play while she is in the home. Couples therapy was recommended; however, they have not attempted to find a therapist.

George remains unemployed. He denies any illegal drug use. He continues to abuse alcohol periodically. The amount of time he spends playing online games has decreased because his mother no longer has Internet connections in the home. He is intermittently compliant with citalopram, bupropion, and divalproex. George also has never shown an interest in the CBT option.

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Cindy Burkhardt Freeman, PMH-NP, BC, is in private practice with Frank Chen and is employed by The University of Texas Health Science Center Houston School of Nursing as an assistant professor and also practices at Family Psychiatry of The Woodlands, TX. She can be reached at CindyB.Freeman@uth.tmc.edu. She has reported no relationships with business or industry that would represent a conflict of interest.

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