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# Treatment Considerations in Internet and Video Game Addiction: A Qualitative Discussion

David N. Greenfield, PhD, Msa,b,\*

#### **KEYWORDS**

- Social media Smartphone addiction Online gaming Internet addiction treatment
- Internet addiction
   Process addiction
   Video game addiction
- Child and adolescent addiction medicine

#### **KEY POINTS**

- This article reviews the etiologic and neurobiological antecedents to Internet and video game addiction.
- An understanding of patient readiness and motivational factors in Internet and video game addiction treatment is addressed.
- The unique aspects of Internet and video game use that contribute to its addictive nature are presented.
- Psychotherapeutic and pharmacologic treatment interventions are presented, along with a comprehensive treatment model.

#### INTRODUCTION

To address the myriad of potential treatment issues and strategies applicable to Internet and video game addiction (IVGA) and related use disorders, a working definition of addiction is first presented. All addictions have similar behavioral and neurobiological etiology and symptomatology, although the severity varies widely.<sup>1</sup>

#### ADDICTION MEDICINE DEFINED

Perhaps, the most comprehensive definition of addiction is one published by The American Society of Addiction Medicine, which captures both the neurobiological and behavioral etiology of disruption in the mesolimbic reward circuitry of the brain and the impact of addictive behaviors:

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<sup>&</sup>lt;sup>a</sup> Department of Psychiatry, University of Connecticut, School of Medicine, Farmington, CT 06030, USA; <sup>b</sup> The Center for Internet and Technology Addiction, 8 Lowell Road, West Hartford, CT 06119, USA

<sup>\*</sup> The Center for Internet and Technology Addiction, 8 Lowell Road, West Hartford, CT 06119. E-mail address: drdave@virtual-addiction.com

#### **Abbreviations**

ADHD Attention deficit hyperactivity disorder

CBT Cognitive-behavioral therapy
IVGA Internet and video game addiction
OCD Obsessive-compulsive disorder
SSRI Selective serotonin reuptake inhibitor

Addiction is a primary, chronic disease of brain reward, motivation, memory and related circuitry. Dysfunction in these circuits leads to characteristic biological, psychological, social and spiritual manifestations. This is reflected in an individual pathologically pursuing reward and/or relief by substance use and other behaviors.

Addiction is characterized by inability to consistently abstain, impairment in behavioral control, craving, diminished recognition of significant problems with one's behaviors and interpersonal relationships, and a dysfunctional emotional response. Like other chronic diseases, addiction often involves cycles of relapse and remission. Without treatment or engagement in recovery activities, addiction is progressive and can result in disability or premature death.<sup>1</sup>

Although premature death is an infrequent consequence of IVGA, there are numerous psychological, behavioral, and physiologic consequences to protracted Internet and video game use.

Numerous anecdotal and clinical reports describe physiologic sequelae secondary to sedentary behavior, including elevated cortisol, hypertension, deep vein thrombosis, electrolyte imbalances leading to cardiac dysrhythmias, obesity, and metabolic disorders. All addictions ultimately impact lifestyle, functioning, and behavior—and hence have similar functional deficits of variable severity.

Brain circuits implicated in the complex biobehavioral phenomenon of addiction include the ventral tegmental area/substantia nigra, amygdala, anterior cingulate, prefrontal cortex, and nucleus accumbens. These circuits are also implicated in IVGA.<sup>4,5</sup> There is some controversy in the addiction medicine as to the similarities and differences between substance-based and behavioral (or process) addictions.

The American Society of Addiction Medicine definition substantively captures the complex biopsychosocial interplay that defines addiction as a complex brain–behavior disorder. Research, clinical experience, and historical analysis of addiction by Hari<sup>6</sup> and Alexander<sup>7</sup> strongly suggest that social isolation is a strongly correlated factor for the development of an addictive pattern to a reinforcing behavior such as drug use or other behavioral addictions. We are hard-wired for social connection, and when deprived of it we are inclined to engage with a drug or behavior that medicates this need. The maxim that "the opposite of addiction is not abstinence but rather connection" speaks volumes about the addictive nature of the Internet, video games and social media—all of which provide a pseudoconnection while often actually isolating the user socially.

#### A DIGITAL DRUG

Some disagreement exists regarding the appropriate nosology for IVGA, but considerable clinical and research data document the use of, abuse of, and potential addiction to the Internet and Internet-mediated gaming.<sup>8–17</sup> Internet content and video games are typically accessed easily via portable handheld and console computers, as well as on smartphones, making ease of access a factor<sup>18</sup> in their addictive potential. Ease of access (or threshold reduction) has a significant impact of the addictiveness

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