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REVIEW

Gaming disorder: what doctors need to know

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Abstract

Playing video games (online or offline) is not a recent phenomenon and for most people it is a leisure activity with no adverse consequences whatsoever. However, for a small minority, gaming has the potential (akin to substance use) to lead on to problematic gaming and gaming disorder. Gaming disorder is a new entry in both the Diagnostic and Statistical Manual of Mental Disorders and the International Classification of Diseases. Given gaming's ever-growing popularity, GPs, psychiatrists and other doctors will be increasingly likely to come across individuals who present with gaming-related problems. Consequently, this article gives doctors a basic understanding of what gaming disorder is, its presentations in practice and diagnosis, and its treatment.

Key words: Gaming addiction; Gaming disorder; Gaming disorder treatment; Gaming epidemiology; Gaming motivation

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Introduction

Gaming disorder is a relatively new entrant in the psychiatric lexicon, although the construct has existed in different guises for over 35 years (Griffiths et al, 2012). Considerable nosological ambiguity surrounds this disorder, with the Diagnostic and Statistical Manual of Mental Disorders 5th edition (DSM-5) preferring the term 'internet gaming disorder' (American Psychiatric Association, 2013) and the International Classification of Diseases (ICD-11, 11th revision) terming it 'gaming disorder' (World Health Organization, 2019). Furthermore, experts are not yet close to consensus on its precise definition, screening and measurement tools, and treatment strategies. The ICD-11 diagnostic criteria for gaming disorder are listed in Table 1.

Playing video games (online or offline) is not a recent phenomenon and for most it is a leisure activity with no adverse consequences whatsoever. Playing video games can have both therapeutic (Griffiths, 2019) and cognitive benefits (Nuyens et al, 2019). However, for a small minority, gaming has the potential (akin to substance use) to lead on to problematic gaming and gaming disorder (Naskar et al, 2016). Online gaming is a rapidly expanding multi-billion dollar industry (Batchelor, 2018). Given the ever-growing popularity of gaming, doctors will be increasingly likely to come across individuals who present with gaming-related problems. Consequently, doctors need to have a basic understanding of what gaming disorder is, its presentations in practice and diagnosis, and its treatment.

Table 1. International Classification of Diseases diagnostic criteria for gaming disorder

A pattern of gaming behaviour ('digital-gaming' or 'video-gaming') characterised by impaired control over gaming, increasing priority given to gaming over other activities to the extent that gaming takes precedence over other interests and daily activities, and continuation or escalation of gaming despite the occurrence of negative consequences
Gaming behaviour must be of a severity to have resulted in significant impairment in the person's personal, family, social, educational, occupational or other important areas of functioning
A duration of at least 12 months

From World Health Organization (2019)

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Epidemiology and gaming motivation

Videogames have evolved considerably in their characteristics, complexity and interactive potential over the past few decades, from offline single-player games in the 1970s (such as Space Invaders) to online games where players can interact with each other within the game itself (massively multiplayer online role-playing games such as World of Warcraft). More recently, online video games such as Fortnite, a multiplayer online battle arena game, have attracted millions of individuals playing concurrently online (Chalk, 2018). Over the past few years, accessibility to online games has greatly increased via playing on different types of hardware, including computer gaming (via a laptop or home personal computer), console gaming (via dedicated gaming equipment such as PlayStation and Xbox consoles) and mobile gaming (via Android or Apple apps on smartphones and tablets) (Columb et al, 2019).

Although methodological differences among studies preclude precise estimates of the prevalence rates of gaming disorder, researchers agree that it is a global phenomenon. Studies in this field have emerged from Asia, Americas, Australia and Europe. King and Delfabbro (2018) reported prevalence rates of gaming disorder from 0.3 to 3.1% among adults, with slightly higher prevalence rates among adolescents (Gentile et al, 2017). It has consistently been found that gaming disorder is more common among men than women (Fam, 2018), with adolescents and emerging adults being the most vulnerable (King and Delfabbro, 2018; Sampogna et al, 2018).

Empirically, the main motives for gaming are for recreation (playful and relaxing aspects), competition (beating opponents and achievement aspects), sociability (for social and friendship aspects), skill development (improving cognitive aspects), fantasy (experiencing aspects not possible in real life), coping (mood improving and aggression channelling aspects), and escape (avoiding reality and problems) (Ballabio et al, 2017). Unsurprisingly, playing videogames to avoid everyday problems (ie escape) appears to be the motivation most associated with psychiatric distress and in predicting disordered gaming (Ballabio et al, 2017).

At present, it appears that few disordered gamers present to psychiatrists. There may be a number of reasons for this, including the fact that addicted adolescents do not seek treatment more generally (Griffiths, 2015) and the fact that gaming is viewed as a meaningful and purposeful activity, and as a large part of gamers' lives (Shi et al, 2019). However, the minority of gamers who develop gaming disorder either present to psychiatrists for help to cut down or stop gaming, or for help in treating its comorbidities. In a systematic review, González-Bueso et al (2018) reported that gaming disorder is most commonly associated with a number of psychiatric disorders including anxiety (92%), depression (89%), attention deficit hyperactivity disorder or hyperactivity (89%), and social phobia or obsessive compulsive symptoms (75%). Related to this, research from gaming disorder treatment-seeking adolescents in Spain demonstrated various different aetiological pathways into problematic gaming (Torres-Rodríguez et al, 2018a, b, c, 2019), highlighting that disordered gaming can occur without any other major comorbidities as well as co-occurring with attention deficit hyperactivity disorder, bipolar disorder and autism.

Research has also begun to examine the relationship between gaming disorder and other potentially addictive behaviours. A systematic review by Burleigh et al (2019) reported that 20 studies had examined the co-occurrence of gaming disorder with other addictive behaviours and found that disordered gaming can co-occur with behaviours such as alcohol use disorder and addictive use of social media. For instance, a large scale survey by Van Rooij et al (2014) reported nicotine, alcohol and cannabis use to be twice as common among male adolescent disordered gamers compared to their non-problematic gaming peers. More research is needed to determine whether gaming disorder is the cause or consequence of these various comorbidities.

Screening and diagnosis

There is no consensus on the best screening tool for gaming disorder. A systematic review by King et al (2013) noted that 18 different screening instruments had been used in 63 quantitative studies (n=58 415), although all of these studies took place before the publication of the DSM-5 criteria for internet gaming disorder. Since that review, a number of psychometric

Table 2. Diagnostic and Statistical Manual of Mental Disorders diagnostic criteria for internet gaming disorder
For a diagnosis of internet gaming disorder, the person must have met five or more of the following criteria in a 12-month period:
1. Preoccupation with internet gaming
2. Withdrawal symptoms when internet access is taken away
3. Tolerance: the need to spend increasing amounts of time engaged in internet gaming
4. Unsuccessful attempts to control internet gaming use
5. Continued excessive internet use despite knowledge of negative psychosocial problems
6. Loss of interests, previous hobbies and entertainment as a result of, and with the exception of internet gaming use
7. Use of internet gaming to escape or relieve a dysphoric mood
8. Has deceived family members, therapists or others regarding the amount of internet gaming
9. Has jeopardised or lost a significant relationship, job, or educational or career opportunity because of internet gaming use

From American Psychiatric Association (2013)

screening instruments have been developed using the nine DSM criteria (Table 2), including the Internet Gaming Disorder Scale (Lemmens et al, 2015) (IGDS) and the nine-item Internet Gaming Disorder Scale-Short Form (Pontes and Griffiths, 2015) (IGDS9-SF). Currently, the most used scale is the IGDS9-SF which has been used in many studies of English-speaking populations (for example the UK, USA, Australia) and non-English-speaking populations but carried out using the English version of the IGDS9-SF (for example India, Hong Kong, Lebanon), as well as being validated in Chinese, Persian, Italian, Portuguese, Slovenian and Albanian (Pontes and Griffiths, 2016; Pontes et al, 2016; Arıcak et al, 2018; Evren et al, 2018; Hawi et al, 2018; Wu et al, 2018; de Palo et al, 2019; Leung et al, 2020). The scale has been shown to have very good reliability and validity in all studies.

Treatment

There is no universally accepted or unequivocally evidenced treatment for gaming disorder (King et al, 2011, 2017). No pharmacological agent has yet been licenced for use in this condition. At present, psychological treatments remain the mainstay. Cognitive–behavioural therapy is the most popular treatment that has been tried, with some success in the short term both in improving symptoms of gaming disorder and in alleviating symptoms of co-existing depression (Stevens et al, 2019). More research is warranted to examine the relative merits of other interventions, such as one-to-one therapy, group therapies and face-to-face vs online psychological interventions.

Several pharmacological interventions have been tried in the treatment of gaming disorder with varying degrees of success. Medications that have shown promise include bupropion (Han et al, 2010), escitalopram (Song et al, 2016) and medications used in the treatment of attention deficit hyperactivity disorder, such as atomoxetine and methylphenidate (Park et al, 2016). While the field awaits more conclusive guidance to emerge from randomised controlled trials, it might be useful for clinicians to opt for a medication based on the type of comorbid psychiatric condition (for example, if there is co-existing depression or anxiety, choose escitalopram or other selective serotonin-reuptake inhibitors; if attention deficit hyperactivity disorder co-exists, choose atomoxetine or methylphenidate).

For the doctor who comes across a person with gaming disorder, be it in adult mental health settings or adolescent settings, as things stand in the UK, a referral to a specialist addiction treatment service might be the best way forward. There are very few exclusive and specialist treatment centres for gaming disorder in the UK.

Key points

- Gaming disorder is a pattern of gaming behaviour ('digital-gaming' or 'video-gaming') characterised by impaired control over gaming, increasing priority given to gaming over other activities to the extent that gaming takes precedence over other interests and daily activities, and continuation or escalation of gaming despite the occurrence of negative consequences.
- Given gaming's ever-growing popularity, doctors will be increasingly likely to come across individuals who present with gaming-related problems. Consequently, doctors need a basic understanding of what gaming disorder is, its presentations in practice and diagnosis, and its treatment.
- There are several easy-to-use screening tools available for use.
- There is no universally accepted or unequivocally evidenced treatment for gaming disorder; no pharmacological agent has yet been licenced for use in this condition; and at present, psychological treatments remain the mainstay, of which cognitive-behaviour therapy is the most popular.

Conclusions

Doctors need to be familiar with the presentations and diagnosis of gaming disorder to facilitate its early identification and appropriate treatment. With technological advances, it is anticipated that both opportunities and accessibility to gaming will increase, both likely to lead to a rise in gaming-related adverse consequences.

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Conflicts of interest

Professor Sanju George is an advisor to the All India Gaming Federation, a not-for-profit organisation focusing on policy and research among various stakeholders working with the gaming industry. He has not received any travel or speaker honoraria from the All India Gaming Federation, nor has he accepted any hospitality from the All India Gaming Federation or any representative of the gambling industry. Professor Mark Griffiths has received funding for a number of research projects in the area of gambling education for young people, social responsibility in gambling and gambling treatment from GambleAware, a charitable body which funds its research programme based on donations from the gambling industry. He also undertakes consultancy for various gaming companies in the area of social responsibility in gambling. Professor Griffiths' university currently receives funding from Norsk Tipping (the gambling operator owned by the Norwegian Government).

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