

Just one more level: Identifying and addressing internet gaming disorder within primary care

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Background

For most people, playing video games is a passionate leisure pursuit: a source of relaxation, fun, socialisation and culture. Moderate play has been associated with greater wellbeing and cognitive abilities in some studies. Yet, for a small subgroup, gaming can become excessive and problematic.

Objectives

This article presents an overview of the world of video games and the recently proposed internet gaming disorder (IGD), as well as advice regarding relevant treatment approaches within primary care.

Discussion

Similar to other addictive disorders (including problem gambling), IGD is characterised by excessive use despite negative consequences, with associated difficulties in reducing or stopping. Studies that have examined individuals with IGD have identified multiple harms, including lower psychosocial wellbeing, greater levels of psychopathology and diminished functioning. As yet, few studies have rigorously examined effective treatment options, but adapting psychological interventions used in the treatment of other addictions (eg motivational interviewing and cognitive behavioural therapy) that incorporate harm minimisation approaches, and addressing underlying issues and associated problems, are recommended.

Australian gamers

Video gaming is a common leisure activity – 65% of Australians regularly play and 93% of households own at least one gaming device.¹ Although many studies have focused on youth, industry data suggest the average Australian gamer is 32 years of age, male and plays, on average, for two to three hours per week.^{1,2} Most gamers play for excitement, fun and relaxation. However, gaming is also a highly social pursuit (both online and offline), as well as an activity that families share. Social interaction is the main reason younger adults play, whereas older gamers play to keep their minds active.¹ With the advent of gaming on mobile devices, games are more easily accessible anytime and anywhere.

How games have changed

Video games boomed in the 1980s when consoles and personal computers brought them into households. In that era, games typically had low-resolution, blocky graphics, simple narratives and challenging game play that focused on timing and coordination. By contrast, many modern-day video games are in high definition, contain accurate physics simulations, are customisable in terms of difficulty and often involve playing with other gamers in online worlds. Modern-day video games are described as ‘hyper-real’ and can resemble a Hollywood film, replete with famous actors and complex storylines. Games sold in Australia require an age-appropriate content rating from the Classification Board. The ratings range from ‘G’ (open to all) to ‘R18+’ (adults only) and are designed, in part, to protect minors from content that may harm or disturb them.

Game genres tend to focus on game play mechanics as well as content (Table 1 provides a simple overview). These genres are not discreet categories and have many overlapping traits such as fantasy themes and puzzles that require solving. While gaming has long been a social pursuit, multiplayer capability (ie the ability to play with other people) has advanced substantially. Many of

the most popular games, such as World of Warcraft, Call of Duty or Elder Scrolls Online, now take place in an online world populated by millions of other players.

Some online games are competition-focused, such as first-person shooters (see Table 1), with an emphasis on improving skill and online rankings through game play in short, fast-paced rounds. By contrast, online role-playing games emphasise the lengthy exploration of a world and character development, including amassing greater in-game wealth, abilities and status. The social element of these games is substantial, facilitating online romances,

communication between distant friends, and coordination or leadership of teams of players in order to advance in the game. This social pressure to 'keep up' with online friends' character progression has been associated with addiction and is discussed below.³ Many of these games do not have a defined end-point, but instead allow almost continual character development.

Economic gaming models have also evolved from the all-encompassing initial purchase. Some games are now free to play initially but require ongoing subscription fees to continue, or small

payments (called microtransactions) to access additional content or features. In some relatively rare games, these microtransactions have an element of luck to what is received, raising concerns that such games may encourage gambling.⁴

Moderate gaming, health and wellbeing

A range of positive factors have been associated with moderate gaming in the general population. Some studies have reported that moderate gamers have significantly higher wellbeing than either non-gamers or frequent gamers (period

Table 1. Game genre overview

Genre	Description	Sub-genre	Example
Platform	Classic game genre that became popular in the 1980s. Players progress past obstacles and enemies by moving through a two-dimensional game world	Side-scrolling, puzzle platformer	Mario Brothers, Limbo
Strategy	Management of resources and units that have defined capabilities in order to overcome opponents, similar to a game of chess	Real Time Strategy (RTS), war based, construction based	StarCraft, Civilisation, Rome: Total War
First-person shooter	Games focused on combat, usually gun battles from the first-person perspective	Shooter, first-person shooter	Call of Duty, Battlefield
Role playing games	Usually played in third-person, focusing on development of a character or 'avatar'. Play involves exploring a world, amassing resources and gaining greater abilities. Most are designed to be played online cooperatively and competitively with other players, but single player and offline versions exist	Massively multiplayer online role-playing game, role-playing games	World of Warcraft, The Elder Scrolls V: Skyrim
Narrative	Focus on story and dialogue, players can often control how game characters communicate to influence the story, often involves searching the game world for clues, usually single-player only	Murder mystery, quest	LA Noire, Maniac Mansion, Day of the Tentacle
Simulation	Focus on realism and mastery of a simulated vehicle or similar difficult real-world skill	Flight, car racing	Gran Turismo, Microsoft Flight Simulator
Sports	Control a sporting team(s) and direct play in order to win	Australian Football League (AFL) football, soccer, basketball	AFL, FIFA, NBA Live
Fighting	Players control a two-dimensional or three-dimensional character that uses martial arts to fight opponents in limited rounds, with an emphasis on complex button combinations, timing and reflexes	Boxing, martial arts	Punch Out, Mortal Kombat
Puzzle	Series of logic puzzles that must be solved, sometimes fast paced, or alternately slow	Fast-paced puzzles, slower world-exploration-oriented puzzles	Bubble Bobble, Myst

of time played).^{5,6} Gaming is associated with the development of problem-solving and cognitive skills⁷ and, in samples of American and Japanese adolescents, has been correlated with the size of their friendship networks, which is an indirect measure of social functioning.^{8,9} Active games, which involve physical exercise through kinetic devices, encourage exercise, and studies have found positive associations with group socialisation and higher self-esteem.¹⁰

Video game addiction

While moderate gaming has been associated with positive outcomes, a small subgroup of gamers report problematic and excessive play. Concerns relate to gamers who play so much that they fail to meet important responsibilities and regulate daily functions, such as sleeping or eating, combined with an inability to reduce or stop playing.¹¹ This has now become a prominent concern, particularly in Asia, where several countries are trialling curfews that restrict the time a person can spend playing video games.¹² Controversial live-in treatment centres have been opened by the Chinese Government¹³ and treatment centres are beginning to emerge in Western nations, including Australia.¹⁴ However, there is limited data available on their effectiveness.

These concerns and growing research in this area have led to the inclusion of ‘internet gaming disorder’ (IGD) in the most recent *Diagnostic and statistical manual of mental disorders*, fifth edition (DSM-5) as a potentially new condition requiring further research.¹¹ IGD is defined on the basis of concepts within the broader addiction literature and has a similar set of diagnostic criteria (Table 2). Common negative consequences of IGD include arguments with, or neglect of, individuals with close relations to the gamer, sleep deprivation, and interference with work or study (Table 2). While common components have been identified, as with other psychiatric conditions, presentations of IGD are likely to vary across sociocultural settings.

Prevalence of IGD, or is it a phase of life?

Studies that used nationally representative samples across multiple countries have estimated the prevalence of IGD to be 6–11%.^{15,16} However, the exact classification system or cut-off points for IGD, which have an impact on previously reported prevalence rates, are still being investigated.¹⁷ Across all classification systems, males show about double the prevalence of females, which is consistent with higher levels of video game play generally.¹ Prevalence is similar in childhood, adolescence and adulthood.

Due to a paucity of longitudinal studies, the course of IGD and whether it is a self-limiting condition is not yet understood. Of the very few longitudinal studies undertaken, results are mixed as to whether IGD is long-lasting and possibly requiring intervention for improvement.^{18,19} As yet, studies have not been conducted over periods much longer than two years,

and all have found individuals differ in their IGD trajectories.^{18,19}

Numerous studies have reported a range of comorbid conditions associated with IGD. A recent meta-analysis concluded that poorer social health was the factor most strongly related to IGD, followed by poorer mental health and academic functioning.²⁰ Symptoms of comorbid mental disorders such as depression and anxiety are common,^{21,22} and are likely to make the condition more problematic and persistent (and vice versa).

Assessment and management of IGD Signs to look for

The American Academy of Pediatrics (AAP) previously recommended no more than two hours of total screen time per day for children.²³ However, acknowledging the increasingly prevalent role of digital devices in life, it has now advised parents to focus more on ensuring beneficial screen

Table 2. Internet gaming disorder (IGD) diagnostic criteria and related addiction component

Criteria	Addiction component
Preoccupation with internet video games until they become the dominant activity in daily life	Saliency (cognitive)
Loss of interest in activities or leisure pursuits with the exception of internet video gaming	Saliency (behavioural)
Irritability, anxiety or sadness when internet video gaming is reduced or ceased	Withdrawal
The need to increase internet video gaming to attain the same effects on arousal or mood	Tolerance
Unsuccessful attempts to control or reduce internet video gaming	Relapse
Deception of family members, therapists, or others, over the amount of time spent internet video gaming	Deception
Continued excessive internet video gaming despite knowledge of the psychosocial problems it is causing	Loss of control
Use of internet video gaming to escape a negative mood	Mood modification
Jeopardised or lost a significant relationship, job, educational or career opportunity due to internet video gaming	Conflict

Note, diagnostic cut-off points are still being investigated, but the current recommendation is five out of the nine symptoms present during a 12-month period. For corresponding addiction components, some generalist addiction models use slightly variant terminology (see Griffiths).²⁴

content and sharing screen time, as well as general good parenting principles, rather than screen time alone.²⁵ Likewise, time spent playing video games is not necessarily a reliable indicator of IGD in and of itself as it is context dependent (eg a person may be on holidays from school and have more time to play games). Referring to the AAP, Brown, Shifrin and Hill state that 'In a world where "screen time" is becoming simply "time", our policies must evolve or become obsolete'.²⁵ Hence, better markers are the diagnostic criteria outlined in Table 2. Key indicators include whether gaming is interfering with important responsibilities or daily functioning, or causing conflict within relationships or families.²⁴ Withdrawing from social life is another concerning sign. However, it is important to keep in mind that gaming is most often not a socially isolated activity. Friendships that take place in person can be bolstered through playing online video games together. However, if a gamer reports that friendships are increasingly, or solely, with people they only interact with online, this may be an indicator of social withdrawal.¹⁹ Poorer mental health, particularly symptoms of anxiety or depression, and sleep deprivation, are likely to be present with IGD.²⁶ Gaming motivations may also provide useful indicators, as gamers who show signs of IGD often play more to escape other problems in their life, with studies finding maladaptive coping to mediate the relationship between video game addiction and symptoms of depression, anxiety and stress.^{27,28}

Incorporating a discussion about gaming in a standard assessment

IGD symptoms can be assessed in the 'Activities' category of the Home, Education and employment, Activities, Drugs, Sexuality, Suicide/depression (HEADSS) clinical assessment framework.²⁹ This framework will also help to ensure appropriate breadth in the assessment of possible comorbid psychosocial issues. It may also be useful

to ask about whether gaming habits have intensified and, if so, why. Discussions should remain open to allow other difficulties to surface, including comorbid mental illnesses, poor coping strategies, or conflict at home, school or work.

Discussing video gaming with parents

Some parents are concerned about their child's gaming behaviour. Explaining the IGD diagnostic criteria may provide clarity about what is or is not healthy gaming. Parents can be advised to:

- not judge an interest in video gaming as wrong or a complete waste of time. Moderate play can be healthy or at least benign
- have some level of involvement with their child's gaming or at least discuss their gaming. If parents like playing games as well, play together sometimes
- encourage social play over solitary play, particularly playing with friends in person (ie rather than online). However, online contact can bolster existing friendships. Meeting new friends online is also a possibility, but younger gamers should be cautious when sharing personal information online with strangers
- negotiate gaming as a reward for meeting key responsibilities (eg 'you can play once you've finished your homework')
- consider setting a total gaming time per day and at a particular time of day. This total figure may also take into account all other media consumption (eg television).

If parents are concerned about violent content in video games, they should consult the classification ratings system. Parents should also discuss the content of the game with their child to determine whether it disturbs them, while taking into account their child's maturity level in handling sensitive or violent media. The relationship between viewing violent media and subsequent violent behaviour is a common community concern, but clear evidence of an association is lacking.³⁰

Brief intervention

Whether discussing the issue of IGD with a gamer or concerned parent, some practical health tips are equally applicable. Intervention should support the person with concerns about their gaming to prioritise and regulate their behaviours, in order to balance gaming with a healthy lifestyle and important responsibilities. Gamers can be advised to:

- ensure an adequate amount of sleep and exercise, and a balanced diet
- set short-term goals in non-gaming-related areas of life
- self-monitor playing time and keep to a predetermined limit. Setting a reminder may help some people to stick to their limit, whereas others may need to involve family members or other supports. For some, a period of time away from gaming or certain gaming genres may be appropriate
- not sacrifice face-to-face socialisation in order to play.

IGD symptoms have been strongly associated with sleep deprivation, and intervening to ensure adequate and regular sleeping patterns has the potential for immediate benefits.¹⁵ A discussion regarding coping strategies is also important,²⁸ including determining whether gaming is the patient's only, or primary, coping mechanism for other problems. Encouraging adaptive coping strategies, such as exercise, problem-solving, mindfulness and seeking support when needed, can be a useful early focus of treatment. If indicated, addressing underlying mental health issues or family conflict is also important.

Severe IGD

If severe IGD (evidenced by endorsement of most or all IGD diagnostic criteria) is evident, or if mental health issues are prominent, referral to a psychiatrist, psychologist or addiction specialist may be warranted. Treatment trials for IGD are currently in their infancy and there is limited evidence for pharmacotherapy. However, treatment approaches used for other addictive disorders are likely to be

relevant for IGD.³¹ A non-judgemental and empathic approach is likely to lead to better outcomes, with motivational interviewing techniques effective in supporting change across all addictive disorders. Psychological approaches, such as cognitive behavioural therapy, also have a strong evidence base in the addiction field and can be easily adapted for IGD.

Resources

- The Network for Internet Investigation and Research, Australia (NIIRA) provides resources for clinicians and patients, www.niira.org.au
- MoodGym is a free, online cognitive behavioural therapy website created by the Australian National University, <https://moodgym.anu.edu.au>
- The Australian Psychological Society's 'Find a psychologist' service allows searching for mental health professionals who specialise in 'Internet gaming, social networking', under the category 'Addictions', www.psychology.org.au

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