Original Article

Internet Gaming Disorder: An Emergent Health Issue for Men

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Abstract

Internet gaming is a legitimate leisure activity worldwide; however, there are emerging concerns that vast numbers of gamers are becoming addicted. In 2013, the American Psychiatric Association (APA) classified *Internet Gaming Disorder* (IGD) as a condition warranting more clinical research ahead of formalizing it as a mental disorder. Proposed as a behavioral addiction, IGD shares many similarities in both physical and psychosocial manifestations with substance use disorder, including cerebral changes on functional magnetic resonance imaging (fMRI). Among the gaming population, compared to females, adolescent and adult males demonstrate far more addictive internet gaming use in terms of screen hours, craving, and negative impacts on health, which have, in isolated incidents, also caused death. The current article draws findings from a scoping review of literature related to IGD as a means to raising awareness about an emergent men's health issue. Included are three themes: (a) unveiling the nature, impacts and symptoms of IGD; (b) conceptualizing IGD through neuroscience; and (c) treatment approaches to IGD. Afforded by these themes is an overview and synthesis of the existing literature regarding IGD as a means of providing direction for much needed research on gaming addiction and orientating primary care providers (PCPs) to the specificities of IGD in men's health. The findings are applied to a discussion of the connections between IGD and masculinity and the importance of recognizing how behaviors such as social isolation and game immersion can be maladaptive coping strategies for males.

Keywords

internet gaming disorder, masculinity, online game, addiction, males, men's health

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Internet gaming is a leisure activity and high growth market worldwide generating an estimated profit of $12 billion in China alone in 2013 (Kuss, 2013). However, there is emerging concern that internet gaming has the potential to evolve into a form of addiction, an issue that has been studied predominately in Asia (Bass, 2015; Kuss, 2013; Poddar, Sayeed, & Mitra, 2015; Spekman, Konijn, Roelofsma, & Griffiths, 2013). Indeed, in China, Korea, and Taiwan, internet gaming disorder (IGD) is considered a serious public health concern (Young, 2009). In the following section, an overview of internet gaming and the emergent issue of IGD is provided ahead of introducing the methods and findings drawn from the current scoping review.

Massive Multiplayer Online Role-Playing Games

As a background to IGD, it is important to understand the features of *massive multiplayer online role-playing games* (MMORPG), the most popular genre of internet gaming with more than 20 million gamers worldwide—a number that is expected to increase (Hussain, Griffiths, & Baguley, 2012; Lee & Leeson, 2015). Evolved from single-player games in the 1980s, MMORPG were developed to enhance gamers' experience, giving them the opportunity to create their own virtual worlds of fantasy and enjoyment (Young, 2009). As the gaming industry continued to evolve and expand markets, games became more sophisticated and interactive. Today, MMORPG, such as *World of Warcraft* and *League of*

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Legends, allow gamers from diverse racial backgrounds, age groups, and geographical locations to connect with one another through custom-built characters to fight virtual battles in real time as a means to improving their characters' standings (Bass, 2015; Northrup & Shumway, 2014). Each game functions as a self-contained society, with its own unique currency, scenery, and rules. The more a gamer plays, the more goods he collects, enabling him to purchase weapons, armors, or magical items and to achieve a higher level of status in the game (Young, 2009). Contrasting offline games using consoles, MMORPG are never-ending, have global reach (Freeman, 2008; Young, 2009), attract gamers to play incessantly, and are associated with a greater tendency to develop addictive behaviors (Kirby, Jones, & Copello, 2014; Lee & Kim, 2017).

Naming and Addressing IGD

In 2013, the American Psychiatric Association (APA) included *Internet Gaming Disorder* (IGD) in the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5). Added to the appendix of the DSM-5, IGD was included as a condition warranting more clinical research before being classified as an official mental disorder. Many terms have been used to describe IGD in the literature, including internet gaming addiction, online gaming addiction, computer game addiction, and pathological gaming (Lee & Kim, 2017; Lemmens, Valkenburg, & Peter, 2011; King & Delfabbro, 2014; Kuss, 2013; Petry & O'Brien, 2013; Vollmer, Randler, Horzum, & Ayas, 2014). In keeping with the APA category, the term IGD is used in the current article. In its infancy, IGD, as a newly proposed mental disorder, is not well known to primary care providers (PCPs). IGD, however, is undeniably a serious emergent problem, likely underreported and underestimated in clinical practice (Bass, 2015). Providing frontline care to clients, PCPs of various disciplines, including family doctors, mental health counsellors, and community nurses, play a vital role in early recognition and provision of timely treatment of IGD. It is, therefore, imperative for PCPs to become familiar with IGD.

Currently, the APA diagnostic criteria consider both genders equally vulnerable to IGD; however, the majority of research and documented cases of IGD involve male adolescents and young adults (Bass, 2015; Kuss, 2013; Lee & Kim, 2017; Li & Wang, 2013). Building on this, it can be reasonably argued that IGD must be understood as an emergent men's health issue. The purpose of the current scoping review and article is threefold: (a) to increase PCPs' understanding of IGD and its relation to male clients, (b) to highlight the practice implications of IGD for PCPs, and (c) to summarize the current research evidence on IGD and identify gaps.

Search Strategy

A scoping review methodology was used to guide the search of a wide range of research and nonresearch clinical materials (Davis, Drey, & Gould, 2009) across the databases CINAHL, Medline (PubMed Platform), and PsycINFO. Scoping reviews provide a means to examine the extent and nature of research activity in a particular area; summarize and communicate the existing literature in emergent fields, make conclusions by identifying knowledge gaps and recommending future research and/or policy directions (Armstrong, Hall, Doyle, & Waters, 2011; Fitzgerald & Merchant, 2010; Levac, Colquhoun, & O'Brien, 2010). The initial keywords used were internet gaming, addiction, and male. To expand the search results, the keywords were then refined with the addition of terms: (internet OR online) gaming, internet gaming disorder, addiction, and (male* OR men). Techniques used included tools such as Boolean operator and truncation to expand and narrow searches. The search produced 327 results. As an initial screen, titles and abstracts were read and screened independently by the primary author, checked by the second author, and any articles not pertaining directly to IGD were eliminated. The inclusion criteria included: (a) English language research published between 2008 and January 2017; and (b) a study focus on IGD in male-only or mixed sex samples that were formally compared. The 2008–2017 timeframe was chosen because these 10 years constituted an explosive growth phase in the MMORPG industry. After the initial screen, 38 articles were inspected closely in a second screen for relevance; this process culminated in 13 articles being selected for inclusion in the current scoping review. The final set of articles was tabled and the key findings from each article charted to share the current state of knowledge about IGD. The following data were extracted from each article: author, year, and place of study; study design; key objectives of the study; and whether the study was industry sponsored. Guided by the research question, *what are the characteristics of IGD and its implications for men's health?*, the articles were compared and contrasted, and then grouped into broad categories based on the content of the articles' main findings. These categories were condensed into three overarching themes reflective of the set.

Results

The articles in this review were primarily quantitative studies with a conspicuous absence of qualitative research investigating IGD from the perspectives of male users. Studies that included males and females in the design calculated sex-based differences in gaming addiction and/or usage, but none investigated the phenomenon of online

Table 1. Scoping Review Article Summaries.

Authors/Date/Country	Type of article	Key aims/Objectives
Bass (2015), United States	Literature review	To review the clinical features of gaming addiction in children and adolescents
Dong and Potenza (2014), China/United States	Literature review	To discuss the use of a cognitive-behavioral model for conceptualizing IGD
Freeman (2008), United States	Literature review	To provide an overview of internet gaming addiction in adults with a focus on treatment
Hussain et al. (2012), UK	Correlational study *n* = 1420, mixed sample for sex comparison	To examine risk factors associated with MMORPG addiction
King and Delfabbro (2014), Australia	Systematic review	To conduct a review on 29 quantitative studies on internet gaming cognition and seven treatment studies employing CBT for IGD
Kuss (2013), UK	Literature review	To discuss internet gaming addiction in the context of neuroscience and clinical diagnosis
Lee and Kim (2017), Korea	Correlational study *n* = 1,556, mixed sample for sex comparison	To analyze the predictors of IGD
Li and Wang (2013), China	Two-part correlational study Part 1: *n* = 495, mixed sample for sex comparison Part 2: *n* = 28, all males	To examine the role of cognitive distortions in the development of IGD (Part 1) and to evaluate the effect of CBT on cognitive distortion compared to basic counselling (Part 2)
Meng et al. (2014), China	Meta-analysis	To explore the underpinning neuro-scientific basis of IGD by reviewing 10 high-quality brain-analysis studies
Northrup and Shumway (2014), United States	Qualitative and phenomenological study *n* = 10 males	To describe the lived experiences of the spouses of line game addicts via qualitative, phenomenological methodology
Spekman et al. (2013), Netherlands	Correlational study *n* = 1,004 males	To examine how gaming exposure and problematic gaming behavior are related to personality patterns associated with addiction
Vollmer et al. (2014), Germany	Correlational study *n* = 741, mixed sample for sex comparison	To assess the relationship between IGD and computer game usage time, age, sex, and personality
Young (2009), United States	Literature review	To review online gaming addiction and treatment issues in adolescents

Note. MMORPG = massive multiplayer online role-playing games; IGD = internet gaming disorder.

gaming addiction from the perspective of masculinity despite this being a well-established approach to exploring connections between gender and men's mental health issues (Connell, 2005; Courtenay, 2000).

Among the 13 articles were five correlational studies (Hussain et al., 2012; Lee & Kim, 2017; Li & Wang, 2013; Spekman et al., 2013; Volmer et al., 2014;), five literature reviews (Bass, 2015; Freeman, 2008; Dong & Potenza, 2014; Kuss, 2013; Young, 2009), one systematic review (29 quantitative studies and seven treatment studies) (King & Delfabbro, 2014), one meta-analysis (on 10 high-quality articles) (Meng et al., 2014), and one qualitative study (Northrup & Shumway, 2014). A summary of the 13 included articles is provided in Table 1. The articles covered diverse topics related to IGD but shared three major themes: (a) unveiling the nature, impacts, and symptoms of IGD; (b) conceptualizing IGD through neuroscience; and (c) treatment approaches to IGD.

Unveiling the Nature, Impacts, and Symptoms of IGD

According to the Entertainment Software Association, the average age of gamers is 30 years, debunking the myth that only adolescents are interested in gaming. In fact, 68% of the gaming population are older than 18 years old (Northrup & Shumway, 2014; Vollmer et al., 2014). Hussain et al. (2012) reported that adolescents had a tendency to play more frequently in a week (i.e., inverse relationship between age and frequency of gaming), whereas adults were more likely to play for longer in a single gaming session. Gaming time among adolescent

males also ranged from one to one and half hours per day, on average, and up to 13 hr per week (Lee & Kim, 2013; Spekman et al., 2013). Adult males tended to spend more time gaming, playing, on average, 4.68 hr per day and 27.76 hr per week (Kirby et al., 2014).

Overall, males, across age ranges, devoted more time and effort gaming on computers than females, leading some to suggest computers were toys for males (Kuss, 2013; Vollmer et al., 2014). Research also indicated that approximately four in five MMORPG players were male (Hussain et al., 2012). It is important to note that most games on the market are designed by males for males (Spekman et al., 2013). Indeed, gaming companies target male customers, capitalizing on this strategy to boost sales (Kuss, 2013; Vollmer et al., 2014). This may partially explain the higher gaming usage in males and men's increased vulnerability to IGD.

The motivations for playing MMORPG provide insights to the addictive gaming behaviors among males. The three common factors identified in the literature were achievement, sociability, and immersion (Kuss, 2013; Hussain et al., 2012; Vollmer et al., 2014). Achievement entailed advancing in the game through leveling up, acquiring status and power, gaining the ability to challenge and dominate others. Reputation and admiration from fellow gamers in the gaming community as a result of persistent and skillful play also enhanced the sense of achievement, encouraging gamers to devote more time and effort to continue playing (Kuss, 2013). In a study by Yee (2007) surveying 3000 gamers, male gamers were significantly more likely to be driven by achievement than their female counterparts.

In terms of sociability, the virtual world of MMORPG creates a space for gamers to interact with others, make new friends, form new relationships, and work in teams (Kuss, 2013). For gamers who may experience loneliness and/or have few friends, MMORPG can be an attractive and legitimate portal to achieve social acceptance. These virtual practices for social connection however are also linked to mental illness including anxiety and depression (Dauriat et al., 2011).

Regarding the factor of immersion, MMORPG allows gamers to escape real life and hide in the gaming world. Using it as a coping strategy, gamers are able to avoid negative moods or thoughts including fear of failure, for as long as they remain in the game (Bass, 2015; Kuss, 2013). Of the three motivation factors, escapism by means of immersion has the strongest association with addictive behaviors and is therefore most predictive of IGD (Dauriat et al., 2011; Hussain et al., 2012; Kuss, 2013).

Overall, there is evidence suggesting that being male is a predictor for IGD. In Lee and Kim's (2017) survey of 1,556 students (51% male) living in five Korean cities, a sex comparison concluded that among addicted online gamers, males were three times more likely to be addicted than females. A similar outcome was noted by Li and Wang (2013). In their study of 495 Chinese adolescents (47.5% male), they determined that males were at greater risk of developing online game addiction than the females. The researchers utilized various questionnaires including the Internet Addiction Scale, Cognitive Distortion Scale, and the Online Game Cognitive Addiction Scale. These results are consistent with other findings that pathological gamers are more likely to be male (Choo, Sim, Liau, Gentile, & Khoo, 2014; Hussain et al., 2012).

There were concerns about internet gaming being grounded in a multitude of negative physical and psychosocial consequences (Kuss, 2013). Physically, constant staring at computer screens can cause eye strain and potentially permanent vision impairment, especially in adolescents (Young, 2009). Prolonged sitting with few or no breaks also puts gamers at risk for muscle tension and postural problems, leading to chronic back and joint pain (Young, 2009). Psychosocial issues encompassing diminished real-life relationships, disregard for self-care, sleep deprivation and poor nutrition, decreased school and work performance, low self-esteem, loneliness, increased aggression and hostility, and difficulty with verbal memory were also reported (Bass, 2015; Kuss, 2013). Cognitive distortions, defined as "irrational beliefs about, or inaccurate perceptions of oneself and/or one's environment," were also described (Li & Wang, 2013, p. 1472).

Ryan Van Cleave, the author of *Unplugged: My Journey in the Dark World of Video Game Addiction*, provided a poignant account of how damaging IGD can be. A former gaming addict and university English professor, Mr. Van Cleave depicted in his memoir how he almost lost everything as his life became consumed by online gaming (Spekman et al., 2013). He recalled that he would squeeze in any time he could find to be at the computer playing online games—before classes, during meal time, and late at night while his family slept. He neglected his wife and children, as well as his career at the university. As a result of his gaming addiction, he lost control of his life and became suicidal, ahead of seeking the help which saved his relationships, job, and life. If left untreated, IGD can lead to death. In 2005, a 28-year-old South Korean man died from heart failure secondary to exhaustion after playing the game *Starcraft* at an Internet café for 50 hr straight, and in 2015, a man in Taiwan died of the same cause following a 3-day gaming binge (Young, 2009). Although the incidence of death related to online gaming is low, the issue of IGD is unquestionably deserving of more attention.

IGD shares many similar traits with gambling disorder, which is recognized as a diagnostic entity by the APA (Dong & Potenza, 2014; Hussain et al., 2012; Northrup & Shumway, 2014). For this reason, the APA (2013)

proposed nine potential diagnostic criteria for IGD with adoption and modification from those of the gambling disorder. Five or more of the nine criteria fulfill the diagnosis of IGD.

Preoccupation. This refers to the obsession with internet gaming as the gamer constantly thinks about the next opportunity to play, which creates a distraction from performing daily functions (Bass, 2015; Griffiths et al., 2015; King & Delfabbro, 2014).

Withdrawal. Withdrawal comprises unpleasant symptoms that are experienced for a couple of hours (up to several days) after weaning or cessation of playing. Included are sadness, irritability, anger, anxiety, and difficulty with concentration, all of which could potentially mimic mental illnesses such as depression (Bass, 2015; Griffiths et al., 2015; King & Delfabbro, 2014).

Tolerance. In the context of internet gaming, tolerance describes the need to play for longer periods of time or introduce new games or equipment to achieve the same feeling of satisfaction one experienced initially or in the past (Bass, 2015; Griffiths et al., 2015; King & Delfabbro, 2014).

Unsuccessful attempts to control playing. A hallmark sign of IGD this refers to the inability to control one's gaming behaviors in spite of the desire to decrease the amount of playing time or simply stop playing (Bass, 2015; Griffiths et al., 2015; King & Delfabbro, 2014).

Loss of interests. As a result of excessive, uncontrolled gaming, gamers are gradually diverted from other activities that they previously enjoyed, such as playing sports (Bass, 2015; Griffiths et al., 2015; King & Delfabbro, 2014).

Continued use despite problems. Continued internet gaming despite knowledge and recognition of psychosocial problems, including poor academic performance or job loss, is a sign of potential addictive use. This parallels behaviors seen in substance addiction (Bass, 2015; Griffiths et al., 2015; King & Delfabbro, 2014).

Deceiving. Lying about internet gaming time and activities can indicate problem behavior, as gamers attempt to cover up their addictive habits. This is often done to avoid discouraging or disproving remarks from parents, spouses, or friends (Bass, 2015; Griffiths et al., 2015; King & Delfabbro, 2014).

Escaping negative moods. MMORPGs provide a virtual world that is seen by some as an escape from negative moods, such as anxiety, depression, and helplessness. This escapism, in essence, is a form of maladaptive coping strategy (Bass, 2015; Griffiths et al., 2015; King & Delfabbro, 2014).

Functional impairment. IGD can cause serious impairment of daily functions, debilitating personal relationships, education, and careers. This jeopardizes not only the functionality of the individual with IGD, but also affects the well-being of their loved ones, especially spouses (Bass, 2015; Griffiths et al., 2015; King & Delfabbro, 2014; Northrup & Shumway, 2014).

As a caveat to the aforementioned IGD criterion, it has also been suggested that caution be exercised in making diagnoses because behavioral addictions are a new classification and viewed by some experts as highly controversial (Petry & O'Brien, 2013).

Conceptualizing IGD Through Neuroscience

Currently, there is no consensus on the definition of IGD, but this proposed mental illness is widely discussed and conceptualized as a behavioral or non-substance addiction (Dong & Potenza, 2014; Hussain et al., 2012; Kuss, 2013; Li & Wang, 2013; Love, Laiser, Brand, Hatch, & Hajela, 2015). Within this context a strong neurobiological link to addictive patterns has also been demonstrated in IGD.

According to Bass (2015), Kuss (2013), and Spekman et al. (2013), even though there are no exogenous chemicals involved in IGD, neuroimaging studies reveal that addiction related to excessive and uncontrolled internet gaming is similar in molecular and neuro-circuitry components to substance-related addiction. One study reported that internet gaming can trigger changes in brain activity and structures in cerebral regions involved with reward, motivation, memory, and cognitive control (Kuss, 2013). Particularly, habituation to internet gaming is accompanied by an increased level of dopamine in the dorsal striatum, innervating the dopamine reward pathway and feeding into motivations to want to play even more (Bass, 2015). Over time, restructuring occurs in the anterior cingulate, orbitofrontal cortex, and nucleus accumbens in such a way that natural rewards, including eating and sex, produce less pleasure for gamers, hence further reducing control over the behavior and contributing to neglect of self-care (Kuss, 2013).

A number of fMRI studies have been done in Asia exclusively on male subjects to gain better understanding of the neuropathological mechanism of IGD. A meta-analysis on 10 high-quality studies, all of which employed male-only comparison between an IGD group and a healthy control group, was done by Meng and colleagues (2014). The mean age of participants in these studies ranged from 13.8 to 25.0

years old. Results revealed abnormal activation within the regions comprising the medial frontal gyrus (MFG), the left cingulate gyrus, the left medial temporal gyrus, and fusiform gyrus in the IGD group when compared to healthy controls. Radiographically, the increased activation in these areas is implicated with dysfunction, suggesting decreased resistance to craving and increased impulsivity. In real life, this translates to increased arousal to gaming cues (e.g., pictures from games) and the inability to exercise self-control over gaming (Meng et al., 2014).

It is important to note that mental illness comorbidity, such as mood and anxiety disorders, are often present, making it more difficult to assess IGD (Freeman, 2008). Hypotheses abound in relation to untangling these connections however. For example, are lower self-esteem, loneliness, and lower social competence the result of IGD? Or, are these the symptoms of a preexisting mental disorder and, therefore, should be understood as risk factors for IGD? At this time, the prevalence of mental illness comorbidity in gamers with IGD is under-researched and poorly understood (Freeman, 2008).

Treatment Approaches to IGD

Because IGD is not yet a formal mental illness in the APA diagnostic nomenclature, there is no accepted gold-standard treatment at this time (Bass, 2015). However, most clinicians regard IGD as a subtype of impulse control disorder, and currently, the most common treatment used for IGD is cognitive behavioral therapy (CBT) (Bass, 2015; Dong & Potenza, 2014; Freeman, 2008; Lee, 2011; Li & Wang, 2013). By definition, CBT is a form of psychotherapy that identifies challenges and reframes a client's distorted cognitions and core beliefs about self and the world (Austin & Boyd, 2008). The goal of CBT is to identify, analyze, and ultimately change the habitual, unhealthy, and negative cognitions about self, others, and society that contribute to distressing emotional states and problematic behaviors (Austin & Boyd, 2008; Lee, 2011).

Used as a primary or adjunct therapy for various mental illnesses, including major depressive disorder, generalized anxiety disorder, eating disorder, substance addiction, and chronic pain management, CBT, in essence, assists clients in changing their behaviors by changing beliefs (Goroll & Mulley, 2014). For treatment of IGD, CBT is typically set up as a 12-step program, based on an informal bio-psychosocial-spiritual model (Lee, 2011). It teaches gamers with IGD to improve their inhibitory control ability and recognize maladaptive cognitions, while learning positive coping mechanisms and skills of relapse prevention (Bass, 2015; Dong & Potenza, 2015). Several studies in this scoping review reported positive outcomes with CBT, such as decreased signs of withdrawal, decreased preoccupation, and decreased dependence on internet gaming as an escape (Bass, 2015; Freeman, 2008; Li & Wang, 2013). Other forms of psychotherapy for IGD were mentioned in the literature, including motivational enhancement therapy (MET), cognitive enhancement therapy, (CET), cognitive bias modification (CBM), and brief strategic family therapy (BSFT). Nevertheless, researchers suggest these therapies warrant more investigation to prove their efficacy (Dong & Potenza, 2015; Poddar et al., 2015; Young, 2009).

Discussion and Recommendations

The reviewed literature on IGD offers insights to a significant emergent men's health issue. For example, confirmed by the IGD sex differences research is men's heightened risk (Bass, 2015; Hussain et al., 2012; Li & Wang, 2013) while neuroscience goes some way toward mapping IGD addiction pathways (Meng et al., 2014) and CBT offers a potential generic remedy (Bass, 2015; Dong & Potenza, 2015; Freeman, 2008; Lee, 2011; Li & Wang, 2013). However, conspicuously absent in the literature are insights to the connections between socially constructed masculinities and men's IGD, creating challenges for PCPs diagnosing and treating IGD, especially in light of many men's estrangement from health services (Galdas, Cheater, & Marshall, 2005). There is a significant body of work on masculinities and men's mental health (Oliffe & Phillips, 2008; Oliffe, Galdas, Han, & Kelly, 2013; Oliffe, Creighton, Robertson, Broom, Jenkins, Ogrodniczuk, & Ferlatte, 2017; Robertson, 2007) that could be extremely relevant for future research on IGD, enhancing the current biomedical and psychiatric approaches to behavioral addiction.

Regards connections to gender, vis-à-vis masculinities, Kimmel's (2008) assertion that young men's extended "guyland" phase, comprising hedonistic practices that delay milestones traditionally associated with adulthood, may offer some generation-specific insights to men's IGD risk. Specifically, today, the majority of young men into their 30s focus on leisure and recreation time in contrast to previous generations in which the majority tended to marry, purchase a home, start a family, and pursue a career in their second and third decades (Kimmel, 2008). The trends for the current generation of young men to maintain increased leisure time, amid the rise of the internet are likely strong contributors to the emergence of IGD. The increased prevalence of mental illness among young men has also been linked to social isolation and masculine practices of stoicism and self-reliance, whereby many men internalize their problems and employ maladaptive coping strategies (Oliffe et al., 2017). Young men are known to often rely on maladaptive coping strategies such as excessive alcohol consumption or drug use to self-manage emotional distress, anxiety, depression, or suicide ideation (Capraro, 2000;

Oliffe et al., 2013). Building on this, excessive internet gaming might be understood as an ineffectual but relatively new strategy to self-medicate mental health challenges or an addiction increasing social isolation and contributing to men's mental illness. Either way, for many young men mental illness is strongly linked to weakness, and refuting the need for professional help has been theorized as a means of reclaiming masculine ideals synonymous with control and independence (Oliffe, Galdas, Han, & Kelly, 2013; Sierra Hernandez, Han, Oliffe, & Ogrodniczuk, 2014). With these issues in mind, future research might benefit the field by building nuanced understandings about the connections between masculinities, men's mental health and IGD as a means to effectively diagnosing and treating IGD. In the interim, the following PCPs recommendations are offered.

Practice Recommendations for PCPs

While acknowledging that the emergent nature of men's IGD and the evidence regards diagnosis and treatment, PCPs should consider the ways in which masculine ideals including autonomy, stoicism, strength and competitiveness can predispose men to escape into gaming worlds and fuel their reticence for professional help. Gagnon and Oliffe (2015) recommended working with men rather than trying to change the desire to be strong and autonomous. This approach can guide PCPs toward implementing treatment plans for male clients by collaborating with them to explore healthy coping strategies and options in the management IGD. It is crucial for PCPs to first acknowledge the negative feelings that men may associate with needing professional help for a problem they cannot independently solve (Patrick & Robertson, 2016). By taking this step, PCPs can help to de-stigmatize men's help-seeking and direct them toward effective self-management. Also, since men often tend to be goal- and solution-focused, PCPs should utilize direct and action-oriented approaches to guide men's treatment plans (Patrick & Robertson, 2016). In other words, it is important for PCPs to clearly identify a problem and positively outline a solution plan and goal for men.

Guiding Questions

As previously mentioned, the manifestations of IGD can be similar to the symptoms of mental illnesses including depression (Freeman, 2008). Therefore, PCPs need to diligently discern IGD and its role (i.e., Does an existing mental illness precipitate IGD? Or is IGD causing depressive or anxious mood?). To assess IGD based on the proposed diagnostic criteria, nine open-ended questions are suggested as a starting point for PCPs. Although the presence of five or more criteria is viewed as a conservative threshold for diagnosing IGD, it is important to note that like all psychiatric conditions, significant impairment must be demonstrated in the responses (Petry & O'Brien, 2013).

- *Preoccupation*—"How much time in a day do you spend thinking about games even when you are not playing, or planning when you can play next?"
- *Withdrawal*—"What do you feel when you attempt to cut down or stop gaming, or when you are unable to play?"
- *Tolerance*—"When do you feel the need to play for increasing amounts of time, play more exciting games, or use more powerful equipment to get the same amount of excitement you used to get?"
- *Unsuccessful Attempts to Control Playing*—"How often do you feel that you should play less, but are unable to cut back on the amount of time you spend playing games?"
- *Loss of Interests*—"How much participation in other recreations have you given up due to gaming?"
- *Continued Use Despite Problems*—"How often do you continue to play games even when you know you are not getting enough sleep, being late to school or work, spending too much money, having arguments with others, or neglecting important duties?"
- *Deceiving*—"How often do you lie to family, friends, or others about how much you game, or try to keep your family or friends from knowing how much you game?"
- *Escaping Negative Moods*—"How does gaming help you escape from negative moods, or forget about personal problems, or relieve uncomfortable feelings such as guilt, anxiety, helplessness, or depression?"
- *Functional Impairment*—"What significant changes have occurred with regards to relationships, job, educational or career opportunities because of gaming?"

Limitations and Future Research

Several limitations are acknowledged in the findings drawn from the current scoping review. First, a number of different addiction scales were used across various studies to measure addiction levels, including: the Internet Addiction Scale, Online Game Cognitive Addiction Scale, Internet Game addiction scale, Addiction Acknowledgement Scale, and the Chen Internet Addiction Scale (Kim & Kim, 2015; Ko et al., 2014; Li & Wang, 2013; Spekman et al., 2013). Until one measurement is standardized across studies, the empirical results cannot be meaningfully compared (Petry & O'Brien, 2013). Second, before the wide-spread use of scales to diagnose IGD can be developed and adopted, research is urgently

needed to validate the current diagnostic criteria. The proposed diagnostic criterion of IGD needs further research and evaluation to fully establish sensitivity and specificity (Griffiths et al., 2015). This step is vital to reaching a consensus on each diagnostic criterion, which will help PCPs more accurately assess and identify IGD. Third, cross-cultural considerations need to be incorporated into future studies, as associated biological features, cultural beliefs, gendered practices, and environmental differences may impact study results (Petry & O'Brien, 2013). Since many studies originated in Asia with young men, more research is needed to explore locale specific IGD patterns among diverse samples of men. Fourth, qualitative research with male gamers is essential to better understand the lived experiences of young men and how IGD impacts their everyday lives. Emergent qualitative research has focussed on the experience of the spouses of gamers (Northrup & Shumway, 2014) also referred to as the "World of Warcraft widows" (Lianekhammy & Van De Venne, 2015) pointing to the detrimental effects of addictive gaming on intimate relationships; however, research is needed to illuminate how male gamers themselves perceive the impact of their gaming on others. This kind of research is necessary to develop effective interventions for this emergent men's health issue. Other research needs identified by this scoping review include better understanding issues of comorbidity in the mental health of addicted gamers, and the investigation of potential prevention and treatment options beyond CBT. Addressing the above limitations and gaps in research will also aid the APA efforts toward including IGD as a formal mental illness.

Conclusion

Although IGD is not recognized as an official mental health disorder, it is a significant emergent men's health issue. If left untreated, IGD can lead to detrimental psychosocial impacts, affecting gamers and their families. PCPs can play an important role in providing early intervention, by knowing how to assess and treat men's IGD; however, more research is needed to fully understand, accurately diagnose, and effectively treat this mental health condition.

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